

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Lee, Ryo A. Examiner #: 78600 Date: MAY 04, 2006
 Art Unit: 1713 Phone Number 2-1104 Serial Number: 10/536,858
 Mail Box and Bldg/Room Location: NSM-10A24 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

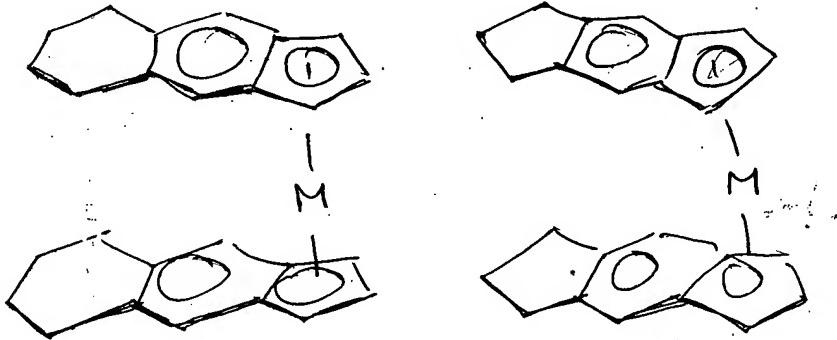
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Process for preparing 1-butene polymers SCIENTIFIC REFERENCE BR
 Inventors (please provide full names): RESCONI, Luigi Sci & Tech Inf. Ctr.
INGUREDO, Antonio E. MAY 4 REC'D

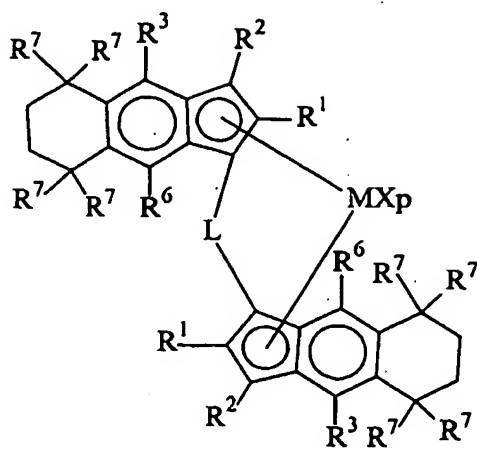
Earliest Priority Filing Date: 04/12/2002 Pat. & T.M. Office

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

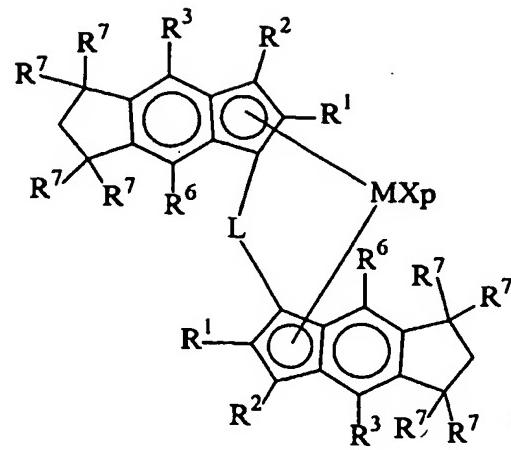
Please search for compounds containing the minimum structure shown below (does not have to be bridged)



STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>EJ</u>	NA Sequence (#)	STN _____
Searcher Phone #:	_____	AA Sequence (#)	Dialog _____
Searcher Location:	_____	Structure (#)	Questel/Orbit _____
Date Searcher Picked Up:	_____	Bibliographic	Dr.Link _____
Date Completed:	<u>5-12-06</u>	Litigation	Lexis/Nexis _____
Searcher Prep & Review Time:	_____	Fulltext	Sequence Systems _____
Clerical Prep Time:	_____	Patent Family	WWW/Internet _____
Online Time:	_____	Other	/Other (specify) _____



(IIa)

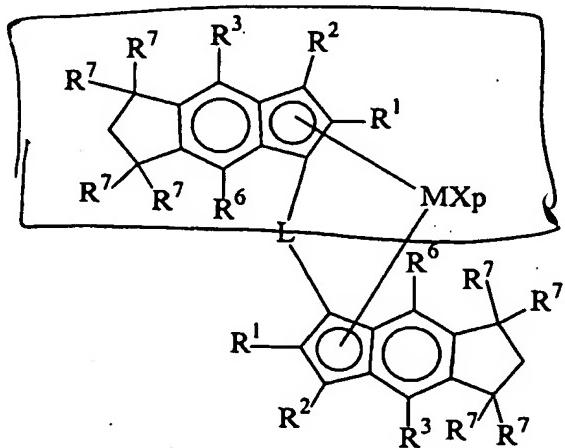


(IIb)

wherein:

M, X, p, L, R¹, R², R³, R⁶ and R⁷ have the same meaning as in claim 1.

6. The process according to anyone of claims 1 to 5 wherein 1-butene is homopolymerized.
7. A metallocene compound of formula (IIb):



(IIb)

wherein M, p, L, R¹, R², R³, R⁶, R⁷ and X have the same meaning as in claim 1.

8. A ligand of formula (V) or its corresponding double bond isomer:

=> file reg
FILE 'REGISTRY' ENTERED AT 09:32:22 ON 12 MAY 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> d his

FILE 'HCAPLUS' ENTERED AT 09:20:44 ON 12 MAY 2006
L1 262 S RESCONI ?/AU
L2 1 S INGURGIO ?/AU
L3 1 S L1 AND L2
SEL L3 1 RN

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L4 34 S E1-E34

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L5 STR

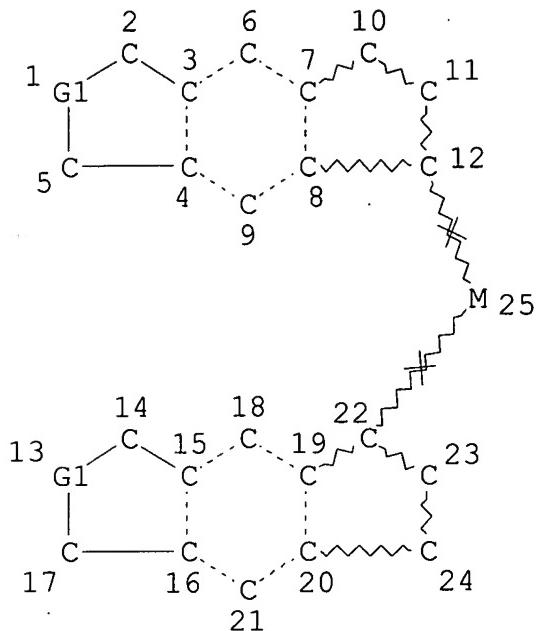
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L8 0 S L7

FILE 'ZCAPLUS' ENTERED AT 09:32:04 ON 12 MAY 2006
L9 8 S L7

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=> d 17 que stat
L5 STR



REP G1=(1-2) C

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 25

STEREO ATTRIBUTES: NONE

L7 44 SEA FILE=REGISTRY SSS FUL L5

100.0% PROCESSED 161904 ITERATIONS

SEARCH TIME: 00.00.02

44 ANSWERS

=> file zcaplus

FILE 'ZCAPLUS' ENTERED AT 09:32:36 ON 12 MAY 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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=> d 19 1-8 ibib abs hitstr hitrn

L9 ANSWER 1 OF 8 ZCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2006:103448 ZCPLUS
 DOCUMENT NUMBER: 144:171492
 TITLE: Polymer production at supercritical conditions
 using metallocene catalysts
 INVENTOR(S): Brant, Patrick; Rix, Francis C.; Kiss, Gabor;
 Reynolds, Robert
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 58 pp., Cont.-in-part of
 U.S. Ser. No. 667,585.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2006025545	A1	20060202	US 2005-177004	200507 08
US 2004122191	A1	20040624	US 2003-667586	200309 22
US 2004127654	A1	20040701	US 2003-667585	200309 22
PRIORITY APPLN. INFO.:			US 2002-412541P	P 200209 20
			US 2002-431077P	P 200212 05
			US 2003-667585	A2 200309 22
			US 2003-667586	A2 200309 22
			US 2004-586465P	P 200407 08

AB The invention relates to a process to polymerize olefins comprising contacting, in a polymn. system, olefins having three or more carbon atoms with a catalyst compd., activator, optionally comonomer, and optionally diluent or solvent, at a temp. above the cloud point temp. of the polymn. system and a pressure no lower than 10 MPa below the cloud point pressure of the polymn. system, where the polymn. system comprises any comonomer present, any diluent or solvent present, the polymer product, where the olefins having three or more carbon atoms are present at 40 wt. % or more, wherein the catalyst is a metallocene of 2 indene derivs. and Zr, Hf, or Ti, is bridged by a hydrocarbon chain optionally contg. B, Al, N, P, Si, or Ge atoms on the cyclopentadienyl ring next to the benzene ring, and has, attached to the metal, 2 groups that may be linked but not form a butadiene group when the metal is Zr.

IT **872883-97-1 872883-98-2 872884-00-9**

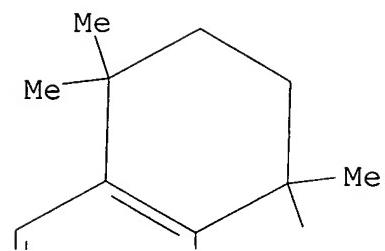
874485-52-6

(polymer prodn. at supercrit. conditions using metallocene catalysts)

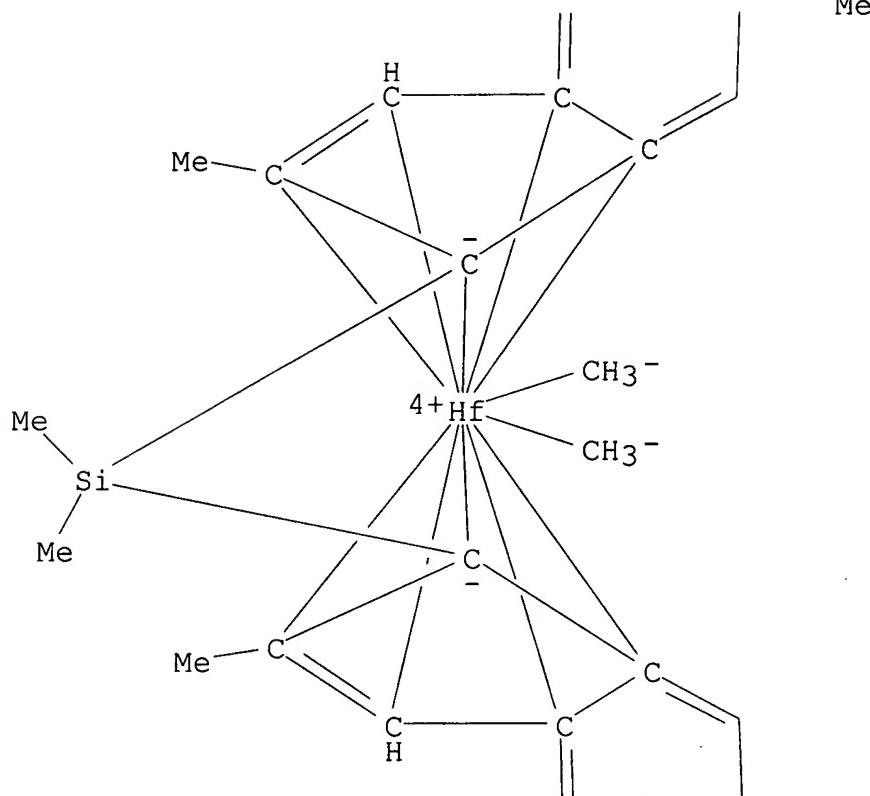
RN 872883-97-1 ZCPLUS

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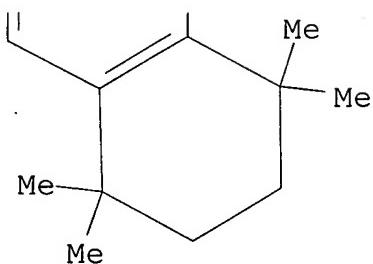
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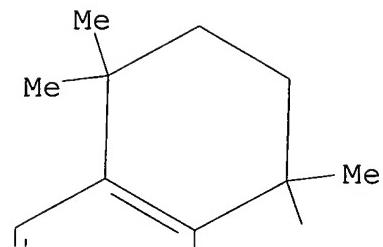
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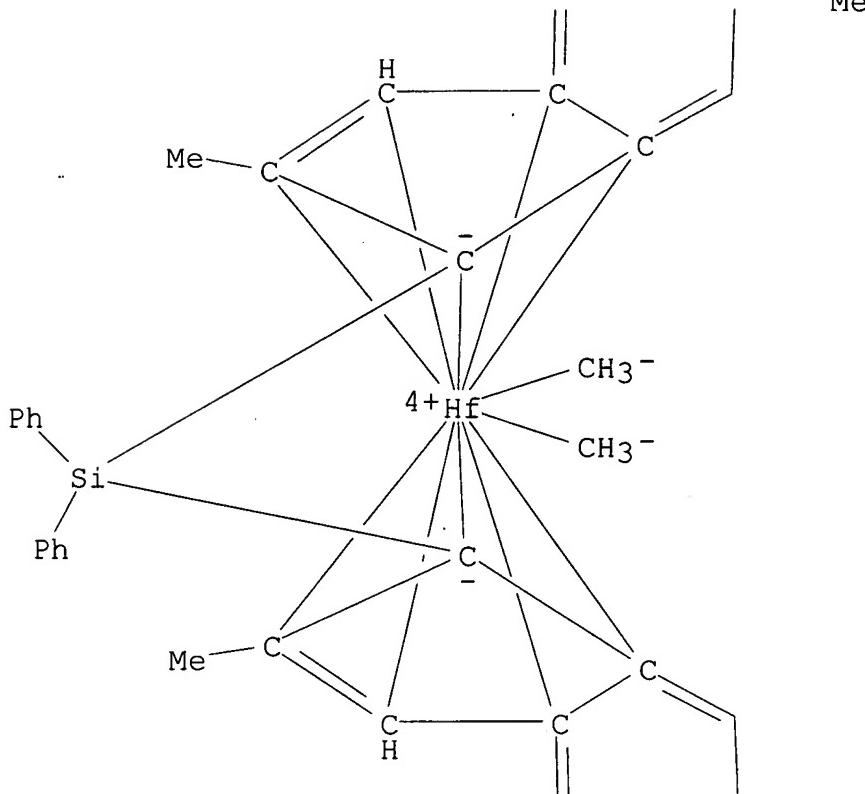
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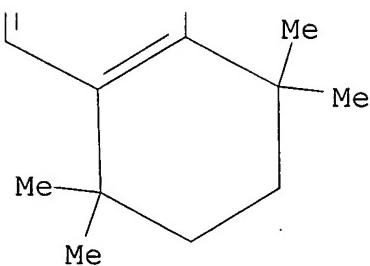
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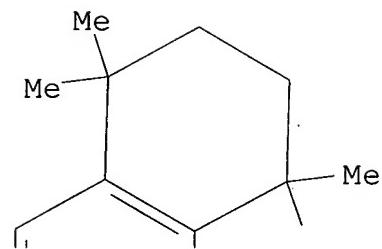
RN 872884-00-9 ZCPLUS

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LEE 10/536,858

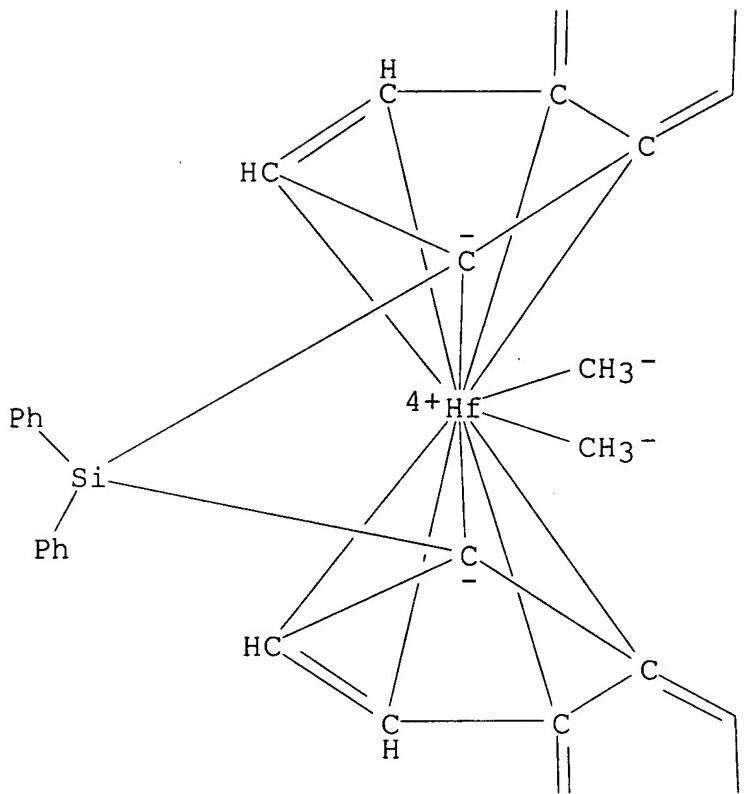
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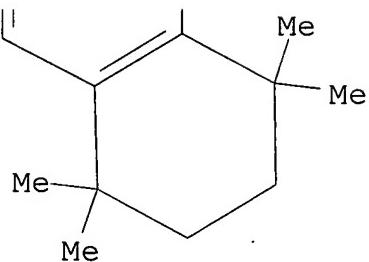


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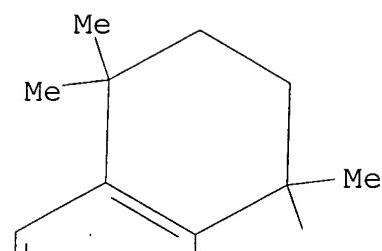


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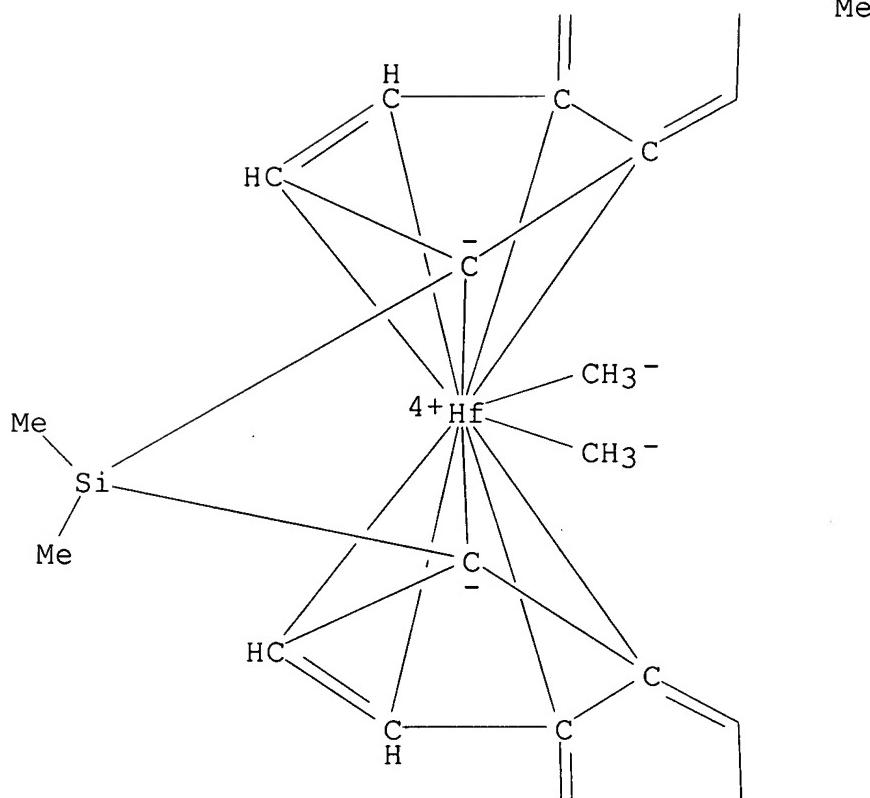
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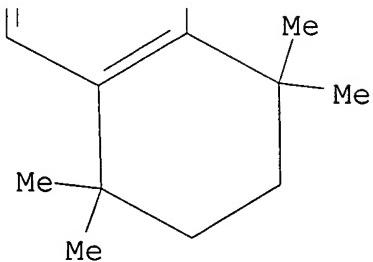
PAGE 1-A



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PAGE 3-A



IT 872883-97-1 872883-98-2 872884-00-9

874485-52-6

(polymer prodn. at supercrit. conditions using metallocene catalysts)

DOCUMENT NUMBER: 144:129401
 TITLE: Olefin polymerization catalyst system and process for use thereof
 INVENTOR(S): Rix, Francis C.; Kacker, Smita; Datta, Sudhin; Zhao, Rul; Eswaran, Vetkav R.
 PATENT ASSIGNEE(S): USA
 SOURCE: U.S. Pat. Appl. Publ., 43 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 4
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 2006009595	A1	20060112	US 2005-178147	200507 08
WO 2006010139	A2	20060126	WO 2005-US24708	200507 08
WO 2006010139	A3	20060316		
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TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
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PRIORITY APPLN. INFO.:

US 2004-586465P

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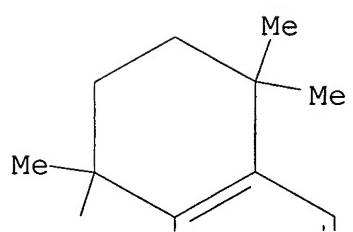
AB The invention relates to novel transition metal compds. with a bridged bidentate ligand contg. tetrahydrobenz[f]indenyl derivs. and to processes to polymerize or oligomerize unsatd. monomers using these transition metal compds. and polymers or oligomers produced therefrom. Thus, rac-dimethylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium di-Me was prep'd., mixed with N,N-dimethylanilinium tetrakis(pentafluorophenyl)borate (activator) and used as a catalyst for polymg. propylene.

IT **872884-06-5P**, Rac-cyclotrimethylenesilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dichloride (intermediate; prepn. of olefin metallocene polymn. catalyst contg. bridged bidentate ligand of tetrahydrobenz[f]indenyl derivs.)

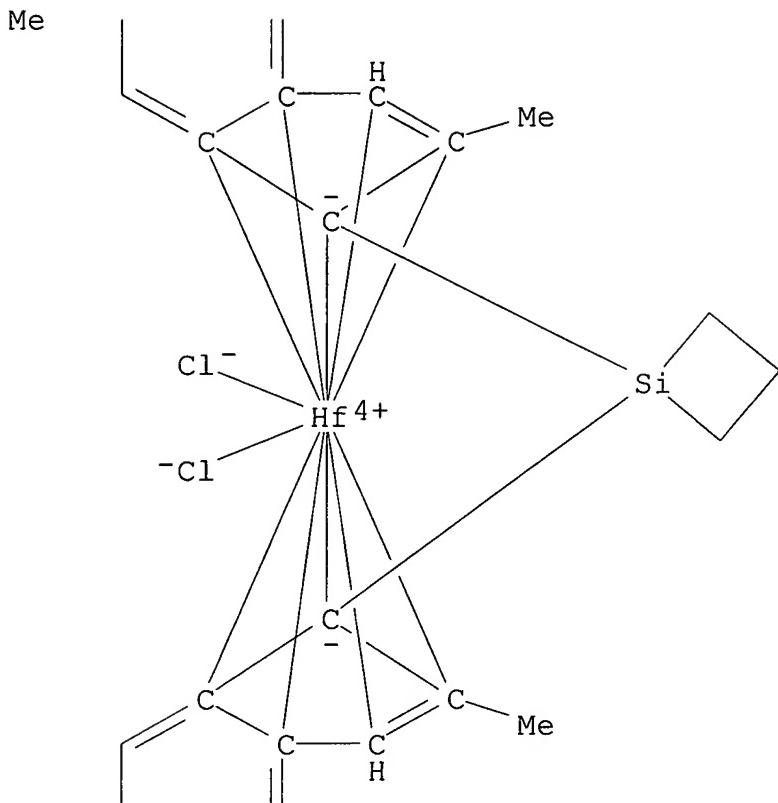
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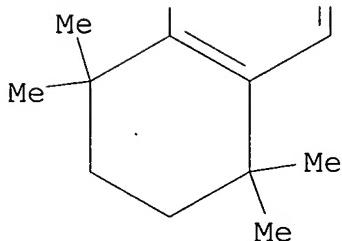
PAGE 1-A



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IT 872884-02-1P, Rac-Dimethylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dichloride
 (intermediate; prepn. of olefin metallocene polymn. catalyst
 contg. bridged bidentate ligand of tetrahydrobenz[f]indenyl
 derivs.)

RN 872884-02-1 ZCAPLUS

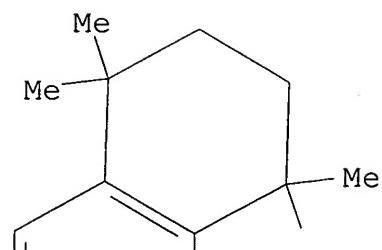
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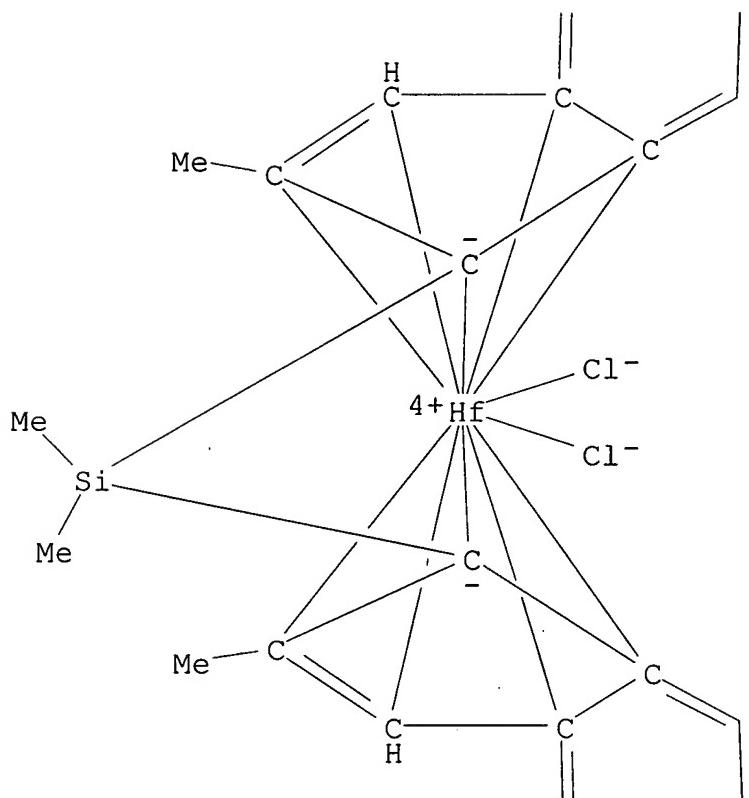
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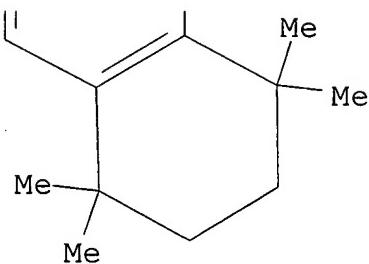


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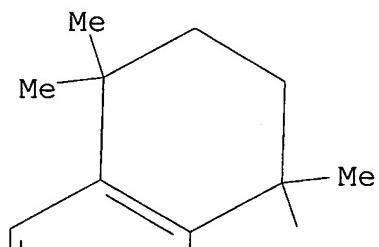
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 872883-98-2P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dimethyl
 872883-99-3P, Rac-cyclotrimethylenesilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dimethyl
 872884-00-9P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-

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872884-01-0P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-
2,5,5,8,8-pentamethyl-benz[f]indenyl)zirconium dimethyl
872884-04-3P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-
2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dichloride
872884-07-6P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-
5,5,8,8-tetramethyl-benz[f]indenyl)hafnium dichloride
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bidentate ligand of tetrahydrobenz[f]indenyl derivs.)

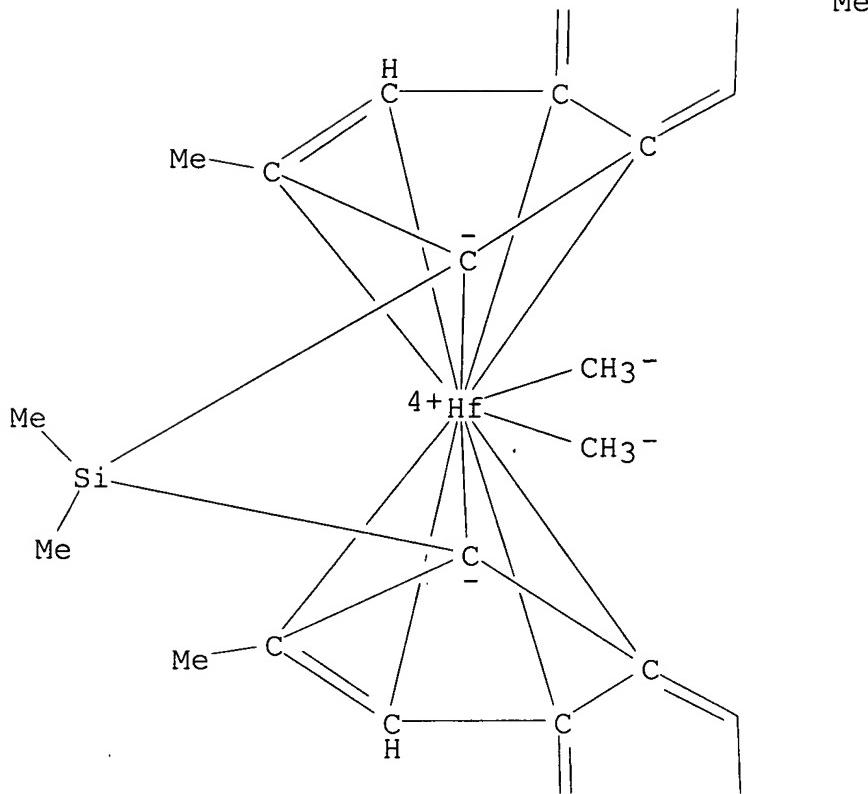
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ylidene]]dimethyl- (9CI) (CA INDEX NAME)

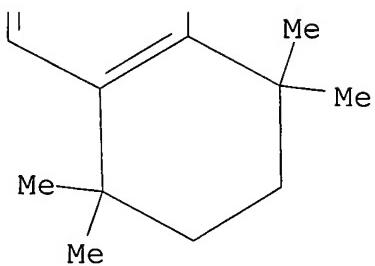
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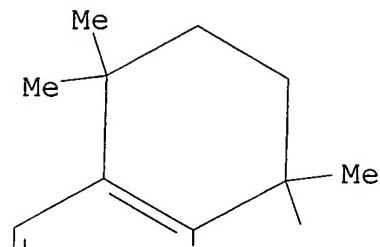
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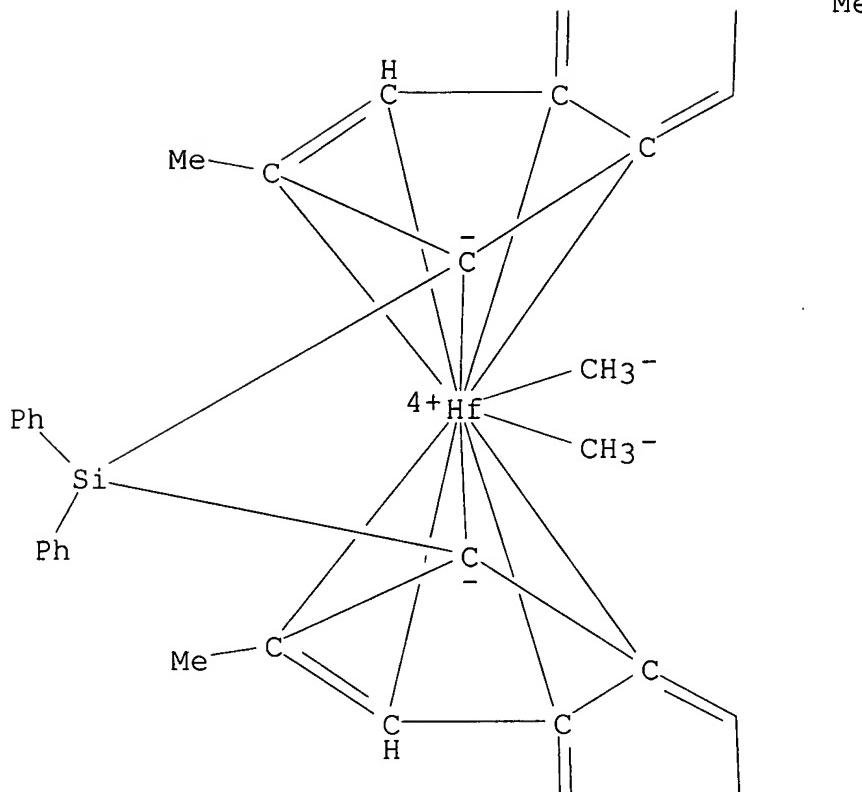
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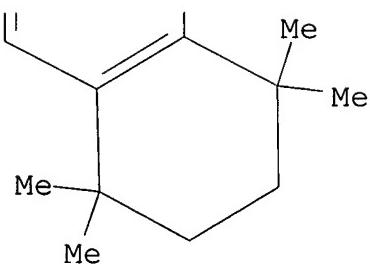
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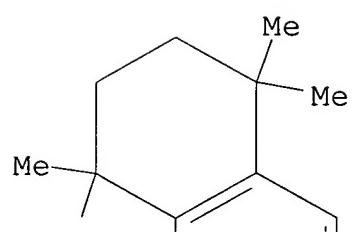
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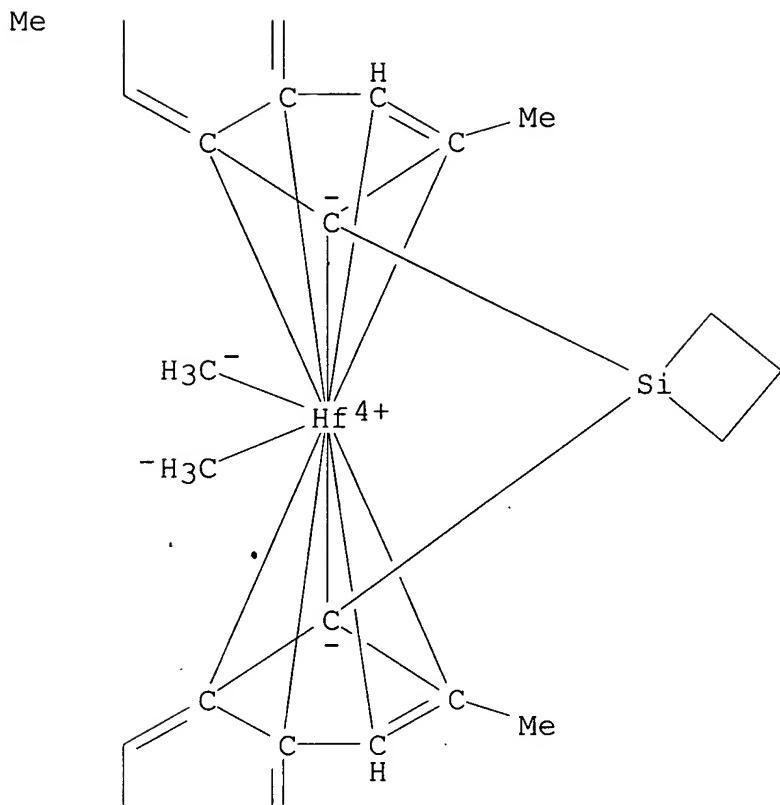
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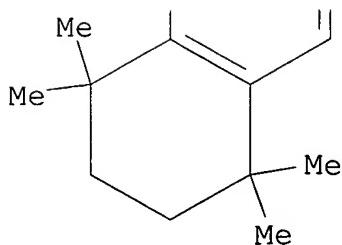
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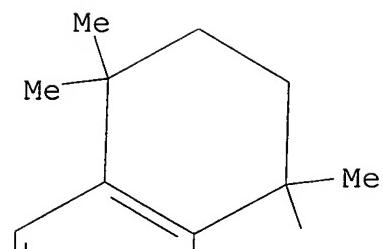
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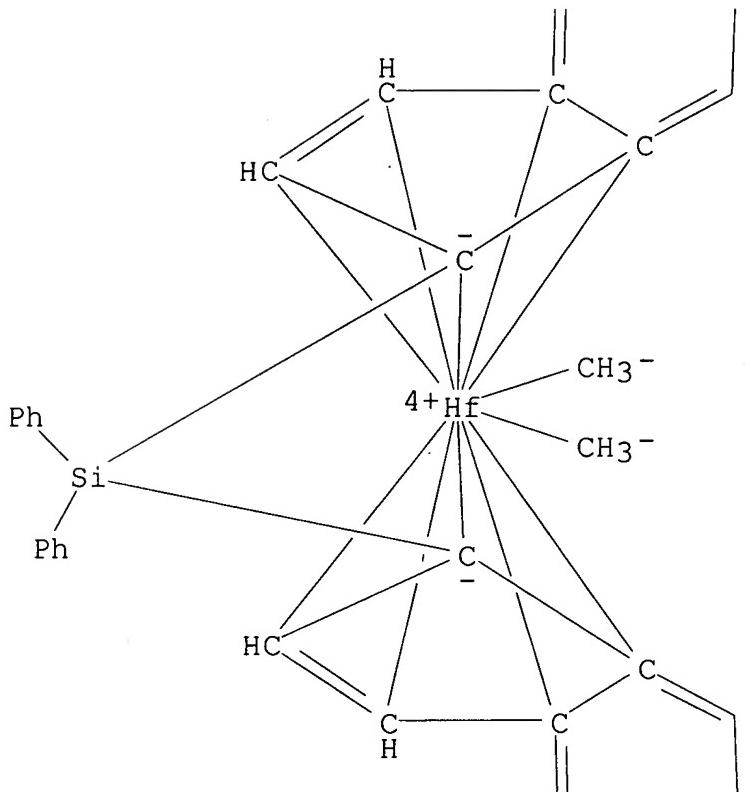
CN Hafnium, [rel-(1R,1'R)-(diphenylsilylene)bis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-1H-benz[f]inden-1-ylidene]]dimethyl- (9CI) (CA INDEX NAME)

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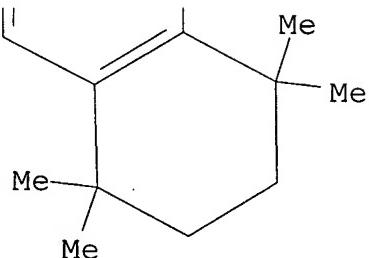


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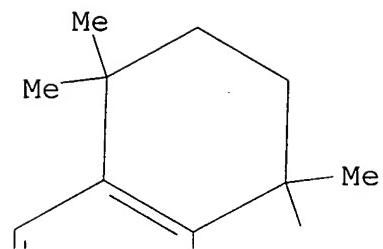
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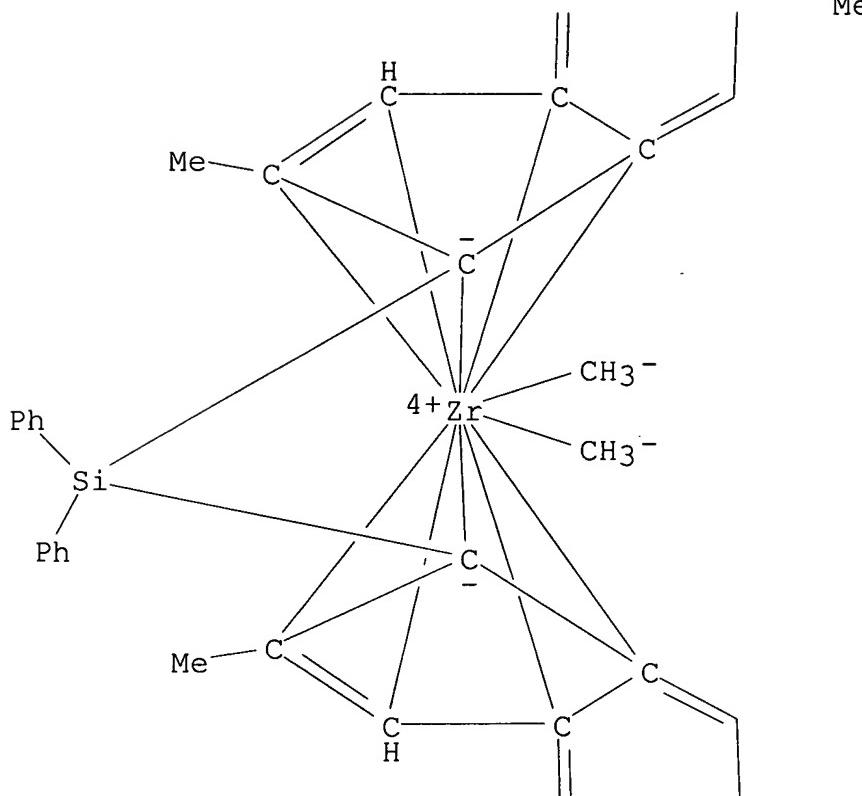
RN 872884-01-0 ZCPLUS

CN Zirconium, [rel-(1R,1'R)-(diphenylsilylene)bis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-1H-benz[f]inden-1-ylidene]]dimethyl- (9CI) (CA INDEX NAME)

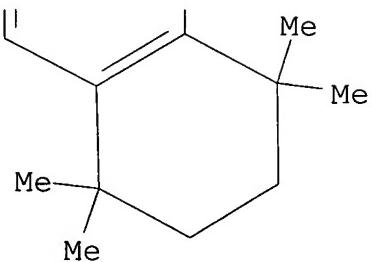
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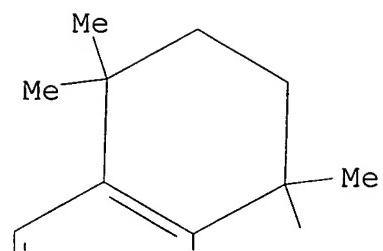
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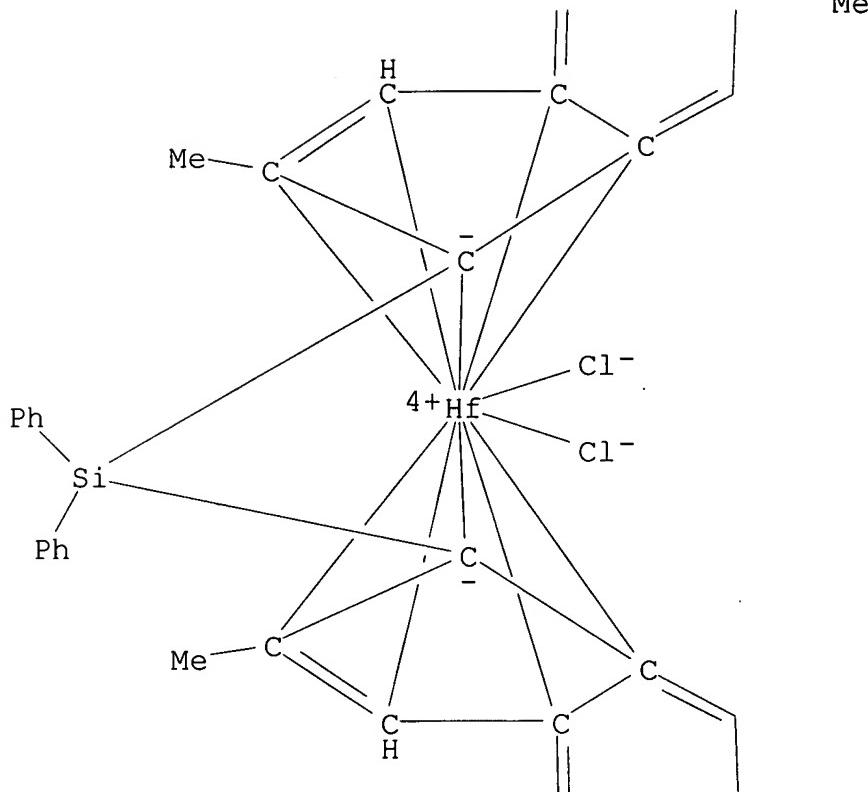
RN 872884-04-3 ZCPLUS

CN Hafnium, dichloro[rel-(1R,1'R)-(diphenylsilylene)bis[(1,2,3,3a,9a-
.eta.)-5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-1H-benz[f]inden-1-
ylidene]]- (9CI) (CA INDEX NAME)

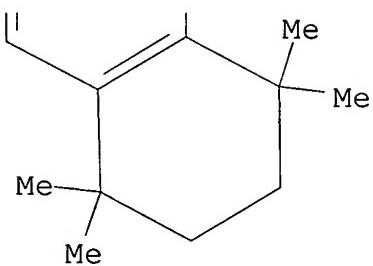
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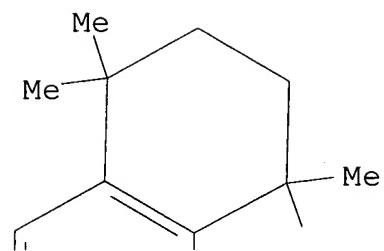
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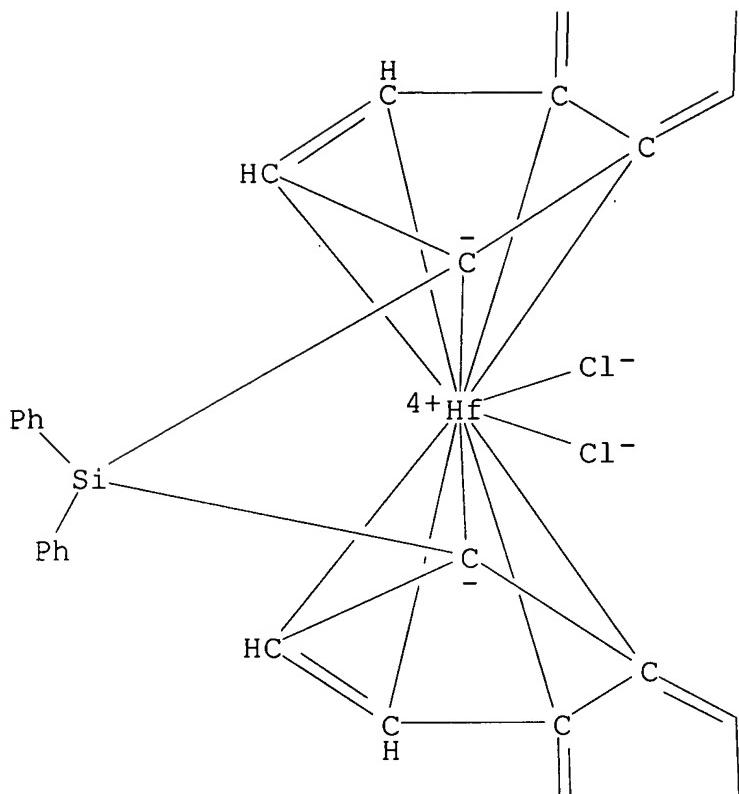
RN 872884-07-6 ZCPLUS

CN Hafnium, dichloro[rel-(1R,1'R)-(diphenylsilylene)bis[(1,2,3,3a,9a-
.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-1H-benz[f]inden-1-
ylidene]]- (9CI) (CA INDEX NAME)

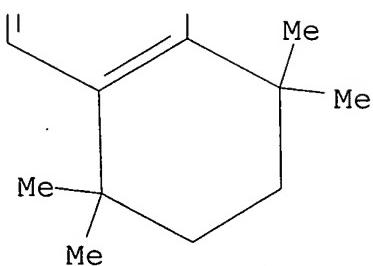
PAGE 1-A



PAGE 2-A



PAGE 3-A



- IT 872884-06-5P, Rac-cyclotrimethylenesilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dichloride (intermediate; prepn. of olefin metallocene polymn. catalyst contg. bridged bidentate ligand of tetrahydrobenz[f]indenyl derivs.)
- IT 872884-02-1P, Rac-Dimethylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dichloride

(intermediate; prepn. of olefin metallocene polymn. catalyst contg. bridged bidentate ligand of tetrahydrobenz[f]indenyl derivs.)

- IT **872883-97-1P**, Rac-Dimethylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dimethyl
872883-98-2P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dimethyl
872883-99-3P, Rac-cyclotrimethylenesilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dimethyl
872884-00-9P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-benz[f]indenyl)hafnium dimethyl
872884-01-0P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)zirconium dimethyl
872884-04-3P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-benz[f]indenyl)hafnium dichloride
872884-07-6P, Rac-Diphenylsilylenebis(5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-benz[f]indenyl)hafnium dichloride
 (prepn. of olefin metallocene polymn. catalyst contg. bridged bidentate ligand of tetrahydrobenz[f]indenyl derivs.)

L9 ANSWER 3 OF 8 ZCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:493760 ZCPLUS
 DOCUMENT NUMBER: 141:38989
 TITLE: Preparation of Indenyl-containing metallocene catalyst and its application for 1-butene polymerization
 INVENTOR(S): Resconi, Luigi; Cascio Ingurgio, Antonio
 PATENT ASSIGNEE(S): Basell Polyolefine G.m.b.H., Germany
 SOURCE: PCT Int. Appl., 35 pp.
 CODEN: PIXXD2.
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2004050724	A1	20040617	WO 2003-EP12236	200311 03

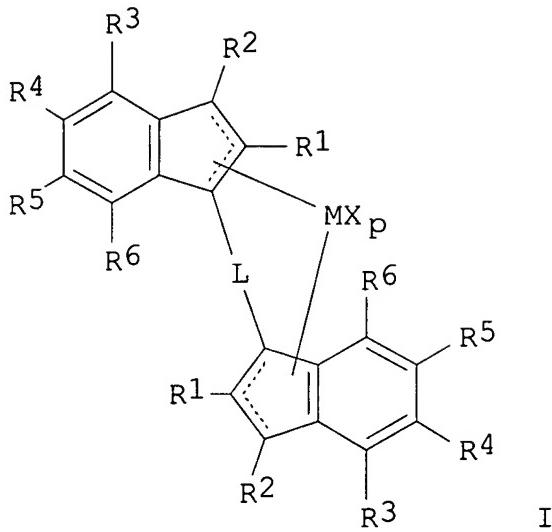
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
 NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ,
 TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,

AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE,
DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
MR, NE, SN, TD, TG

AU 2003276242	A1	20040623	AU 2003-276242	200311 03
EP 1567565	A1	20050831	EP 2003-812143	200311 03
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2006509059	T2	20060316	JP 2004-556103	200311 03
US 2006052553	A1	20060309	US 2005-536858	200505 27
PRIORITY APPLN. INFO.:				EP 2002-80120 A 200212 04
				US 2002-431803P P 200212 09
				WO 2003-EP12236 W 200311 03

OTHER SOURCE(S) : MARPAT 141:38989
GI



AB 1-Butene polymers contg. .1toreq.3 mol.% ethylene, propylene, or an alpha.-olefin, CH₂ = CHZ (Z = C₃-C₁₀ alkyl), is prep'd. using a catalyst system contg. (a) metallocene compd. (I), in which M = transition metal belonging to group 3-6 , lanthanide group, or actinide groups, p = 0-3 integer, X = H, halogen, R, OR, OSO₂CF₃, SR, NR₂, PR₂ (R = C₁-20 alkyl, C₃-20 cycloalkyl, C₆-20 aryl, C₇-20 alkylaryl), R₁ = C₃-20 cycloalkyl, C₆-20 aryl, C₇-20 alkylaryl, R₂, R₃, R₆ = C₁-20 alkyl, C₃-20 cycloalkyl, C₆-20 aryl, C₇-20 alkylaryl, R₄ and R₅ join to form a condensed satd. or unsatd. 4-7 membered ring, and L = divalent bridging group selected from C₁-20 alkylidene, C₃-20 cycloalkylidene, C₆-20 arylidene, C₇-20 alkylarylidene, or C₇-20 arylalkylidene, (b) an alumoxane or a compd. able to form an alkylmetallocene cation, and, optionally, an org. aluminum compd. The synthesis of catalyst (a) is also provided. Thus, 1-butene was polymd. using a catalyst system contg. rac-Me₂Si[2-Me-5,6-(tetramethylcyclotrimethylen)indenyl]ZrCl₂, MAO, and Al(i-But)₃.

IT **704892-49-9P 704892-50-2P**

(prepn. of indenyl-contg. metallocene catalyst for 1-butene polymn.)

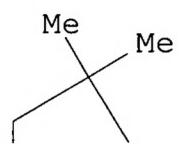
RN 704892-49-9 ZCAPLUS

CN Zirconium, dichloro[rel-(1R,1'R)-(dimethylsilylene)bis[(1,2,3,3a,8a-eta.)-6,7-dihydro-2,5,5,7,7-pentamethyl-s-indacen-1(5H)-ylidene]]-(9CI) (CA INDEX NAME)

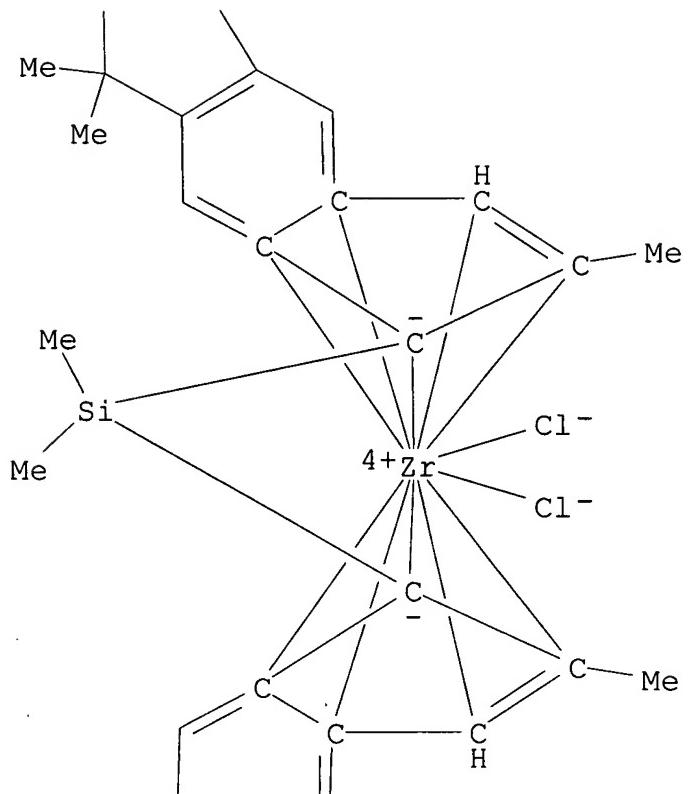
LEE 10/536,858

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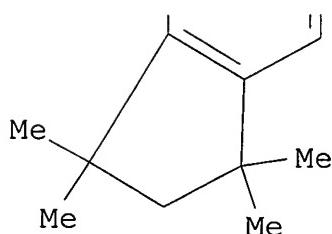
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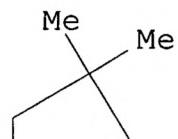
RN 704892-50-2 ZCPLUS

CN Zirconium, dichloro[rel-(1R,1'S)-(dimethylsilylene)bis[(1,2,3,3a,8a-
.eta.)-6,7-dihydro-2,5,5,7,7-pentamethyl-s-indacen-1(5H)-ylidene]]-
(9CI) (CA INDEX NAME)

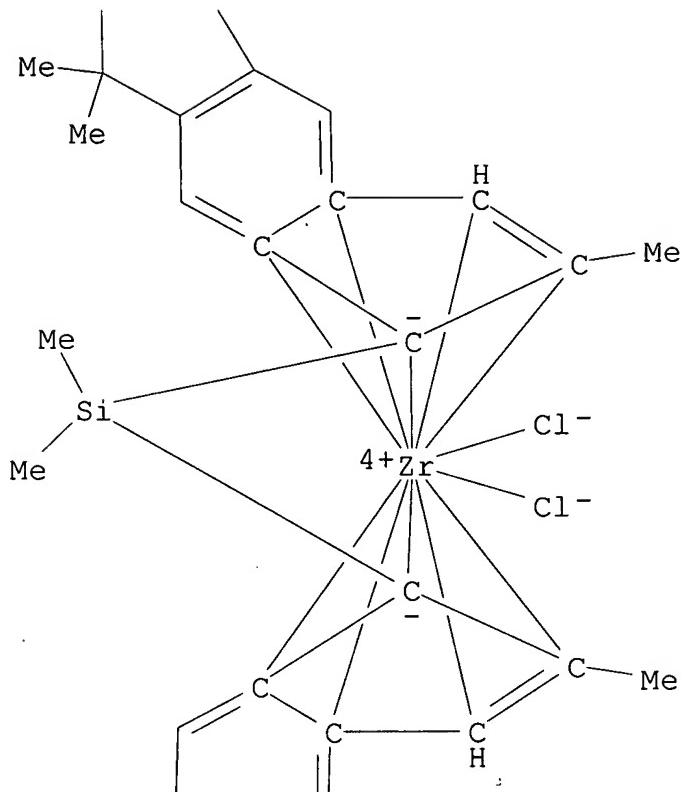
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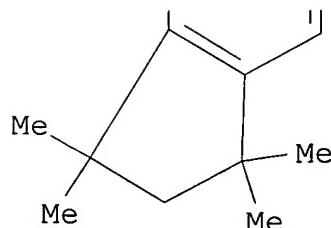
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IT 704892-49-9P 704892-50-2P

(prepn. of indenyl-contg. metallocene catalyst for 1-butene
polymn.)

REFERENCE COUNT:

5

THERE ARE 5 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

ACCESSION NUMBER: 2000:805469 ZCPLUS
DOCUMENT NUMBER: 134:71943
TITLE: Theoretical Study on the Factors Controlling the Accessibility of Cationic Metal Centers in Zirconocene Polymerization Catalysts
AUTHOR(S): Linnolahti, Mikko; Pakkanen, Tapani A.
CORPORATE SOURCE: Department of Chemistry, University of Joensuu, Joensuu, FIN-80101, Finland
SOURCE: Macromolecules (2000), 33(25), 9205-9214
CODEN: MAMOBX; ISSN: 0024-9297
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The influence of the ligand structure of zirconocene polymn. catalysts on the accessibility of the active reaction center was studied by an ab initio Hartree-Fock method. The variations in the accessibility were elucidated by comparing mol. structures and relative stabilities of 54 bridged zirconocene catalysts with 19 different bridging units, 18 ancillary Cp' ligands, and 18 ligand substituents. Ligand variations gave rise to various steric and electronic effects affecting both the nature and the concn. of active metal centers in the system, such as steric blocking or shielding of the metal center, and stabilization or destabilization of the active cationic species. Comparisons to exptl. work demonstrated clear correlations between accessibility of the active reaction center and obsd. polymn. activity. Furthermore, interactions between the Lewis acidic Al centers and Lewis basic functionalities were obsd. The consequences of such interactions are discussed.

IT 315686-87-4

(theor. study on factors controlling accessibility of cationic metal centers in zirconocene polymn. catalysts)

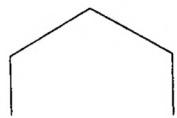
RN 315686-87-4 ZCPLUS

CN Zirconium(1+), [1,2-ethanediylbis[(1,2,3,3a,9a-.eta.)-3-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]-5,6,7,8-tetrahydro-1H-benz[f]inden-1-ylidene]]methyl- (9CI) (CA INDEX NAME)

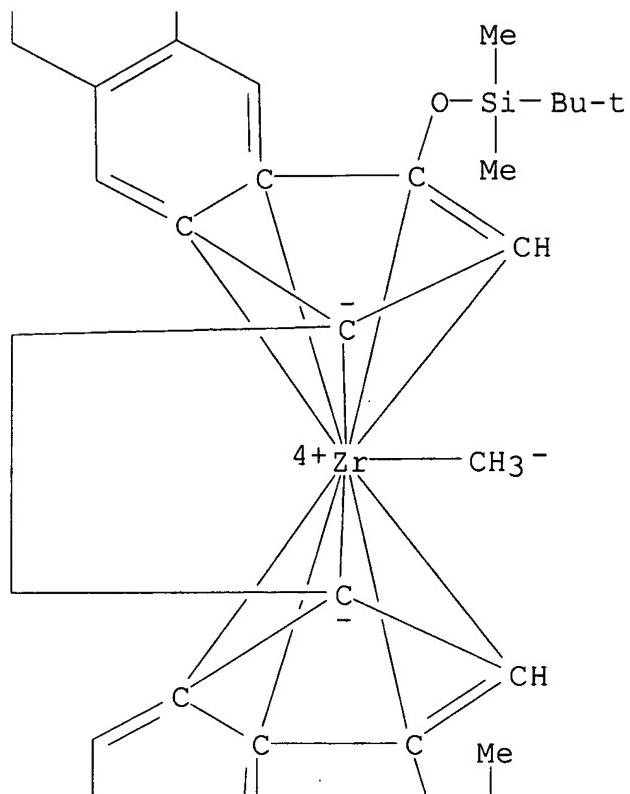
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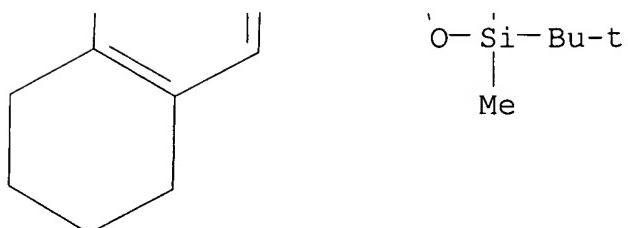
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IT 315686-87-4

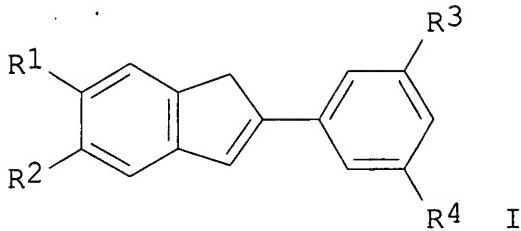
(theor. study on factors controlling accessibility of cationic metal centers in zirconocene polymn. catalysts)

REFERENCE COUNT: 139 THERE ARE 139 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 2000:421193 ZCPLUS
 DOCUMENT NUMBER: 133:59935
 TITLE: Ligands and catalysts for producing elastomeric propylene polymers
 INVENTOR(S): Ernst, Andreas P.; Moore, Eric J.; Myers, Charles L.; Quan, Roger W.
 PATENT ASSIGNEE(S): Bp Amoco Corporation, USA
 SOURCE: PCT Int. Appl., 41 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000035975	A1	20000622	WO 1999-US29616	199912 14
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6479424	B1	20021112	US 1999-459732	199912 13
CA 2355236	AA	20000622	CA 1999-2355236	199912 14
EP 1157047	A1	20011128	EP 1999-967306	199912 14
EP 1157047	B1	20030423		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 238359	E	20030515	AT 1999-967306	199912 14
PRIORITY APPLN. INFO.:			US 1998-112383P	P 199812 14

OTHER SOURCE(S) : MARPAT 133:59935
 GI



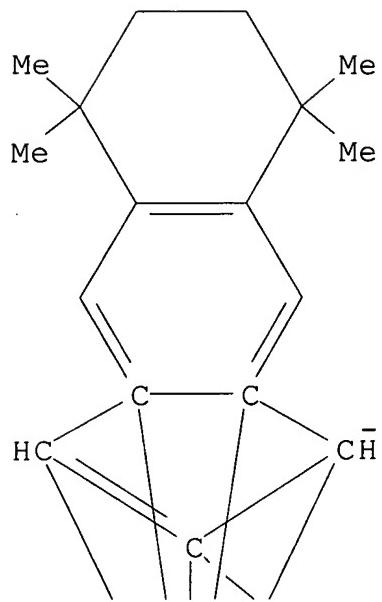
AB A ligand I is useful to form a metallocene olefin polymn. catalyst, where at least R3 and R4 are substituents having at least a bulk of a tert-Bu group and, optionally, where R1 or R2 may be a bulky substituent group. Thus, bis(2-(3,5-tert-Bu₂)PhInd)2HfCl₂ soln. (0.25 g contg. 1.17 x 10⁻³ mmol Hf-tert-Bu₂) was added to 3.8 g and the combined soln. then is added to 0.24 g DMAO soln. (30% Albemarle DMAO in 13.1 % Al, giving [Al]/[Hf] = 1000). At 50.degree./100 psi, propylene was polymd. 30 min using this catalyst soln. to give 4.5 g product elastomer.

IT **276890-37-0P**, Bis(2-(3,5-di-tert-butylphenyl)-5,5,8,8 tetramethyl-5,6,7,8-tetrahydrobenz(f)indenyl)hafnium dichloride
276890-38-1P, Bis(2-(3,5-di-tert-butylphenyl)-5,5,8,8 tetramethyl-5,6,7,8-tetrahydrobenz(f)indenyl) zirconium dichloride (metallocene catalysts for producing elastomeric propylene polymers)

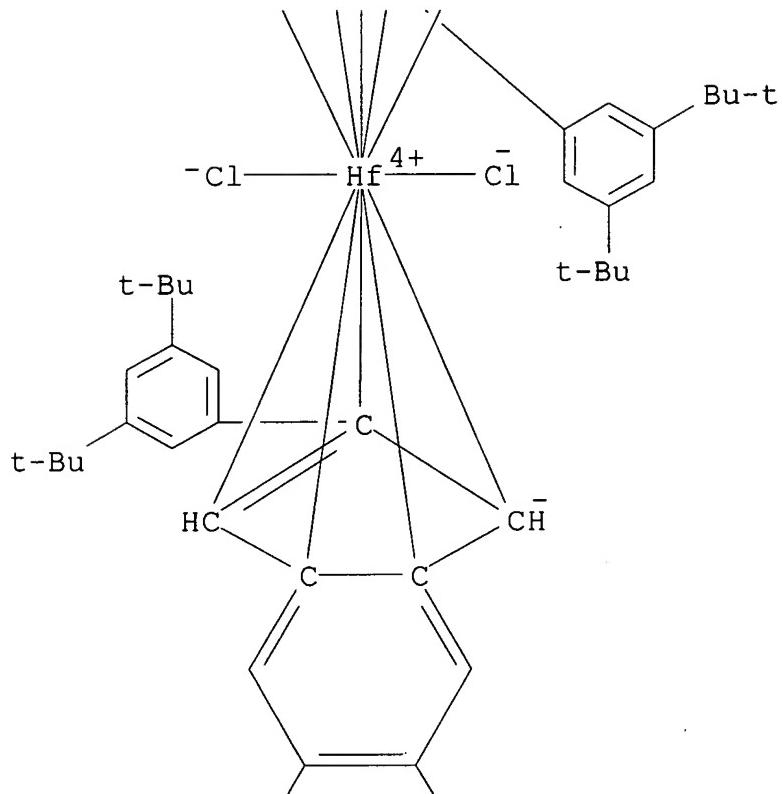
RN 276890-37-0 ZCAPLUS

CN Hafnium, bis[(1,2,3,3a,9a-.eta.)-2-[3,5-bis(1,1-dimethylethyl)phenyl]-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-1H-benz[f]inden-1-yl]dichloro- (9CI) (CA INDEX NAME)

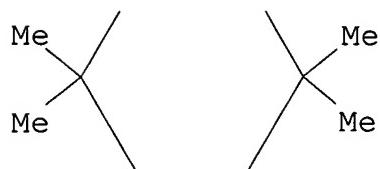
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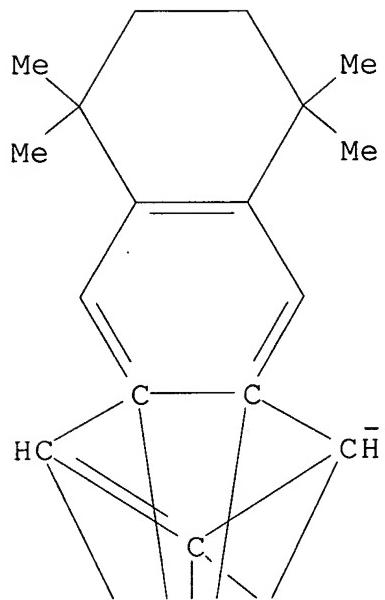


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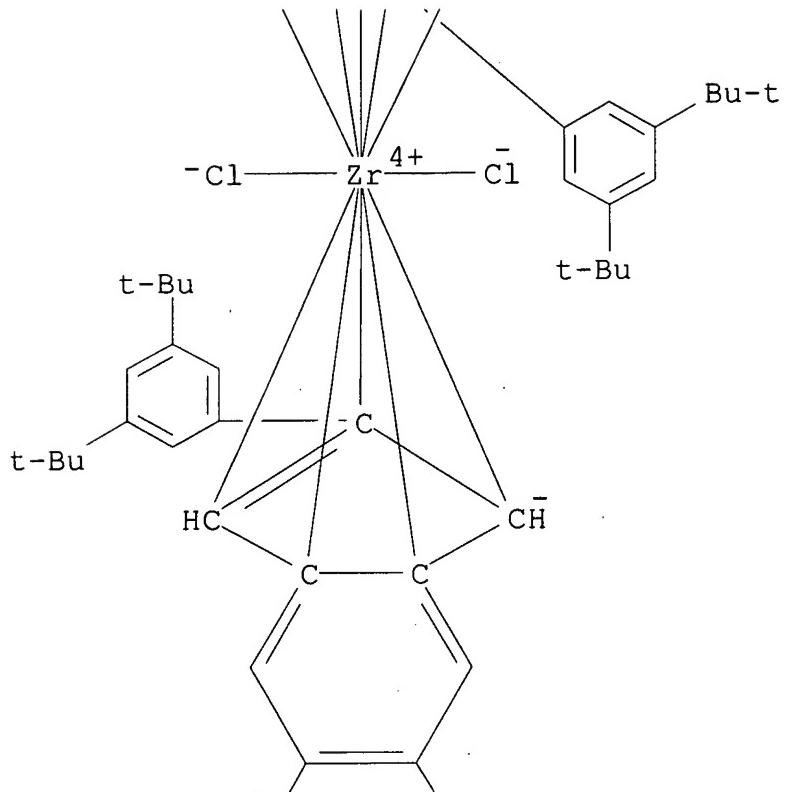


RN 276890-38-1 ZCAPLUS
 CN Zirconium, bis[(1,2,3,3a,9a-.eta.)-2-[3,5-bis(1,1-dimethylethyl)phenyl]-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-1H-benz[f]inden-1-yl]dichloro- (9CI) (CA INDEX NAME)

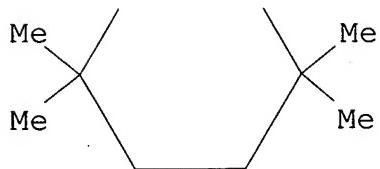
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PAGE 3-A



IT 276890-37-0P, Bis(2-(3,5-di-tert-butylphenyl)-5,5,8,8 tetramethyl-5,6,7,8-tetrahydrobenz(f)indenyl)hafnium dichloride
 276890-38-1P, Bis(2-(3,5-di-tert-butylphenyl)-5,5,8,8 tetramethyl-5,6,7,8-tetrahydrobenz(f)indenyl) zirconium dichloride
 (metallocene catalysts for producing elastomeric propylene polymers)

REFERENCE COUNT:

4

THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 6 OF 8 ZCPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 1999:595183 ZCPLUS
 DOCUMENT NUMBER: 131:243745
 TITLE: Integrated preparation of diene complexes for catalysts for olefin polymerization
 INVENTOR(S): Chen, Eugene Y.; Campbell, Richard E., Jr.; Devore, David D.; Green, Daniel Patrick; Patton, Jasson T.; Soto, Jorge; Wilson, David R.
 PATENT ASSIGNEE(S): The Dow Chemical Company, USA
 SOURCE: PCT Int. Appl., 44 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9946270	A1	19990916	WO 1999-US5230	199903 10
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
CA 2322324	AA	19990916	CA 1999-2322324	199903 10
AU 9929032	A1	19990927	AU 1999-29032	199903 10
US 6084115	A	20000704	US 1999-265641	199903 10
BR 9908807	A	20001031	BR 1999-8807	199903 10
EP 1062219	A1	20001227	EP 1999-909951	199903 10
EP 1062219	B1	20020828		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				

PT, IE, FI				
JP 2002506074	T2	20020226	JP 2000-535647	199903 10
AT 222913	E	20020915	AT 1999-909951	199903 10
PT 1062219	T	20030131	PT 1999-909951	199903 10
ES 2182494	T3	20030301	ES 1999-909951	199903 10
US 6127563	A	20001003	US 1999-420626	199910 20
US 6136993	A	20001024	US 1999-420625	199910 20
PRIORITY APPLN. INFO.:			US 1998-77489P	P 199803 11
			US 1998-91207P	P 199806 30
			US 1999-265641	A3 199903 10
			WO 1999-US5230	W 199903 10

OTHER SOURCE(S): MARPAT 131:243745

AB Bridged Group 4 metal complexes contg. a neutral diene ligand are made starting from the metal diene contg. complex by reaction with the divalent deriv. of a bridged bidentate ligand compd. Thus, ethylene and 1-octene were polymd. in alkane solvent in the presence of rac dimethylsilanebis(2-methyl-4-phenylinden-1-yl)zirconium(II) 1,4-diphenyl-1,3-butadiene and cocatalyst at 140.degree..

IT 244146-41-6 244146-42-7 244146-43-8
 244146-44-9 244146-50-7 244146-51-8
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244146-98-3 244146-99-4 244147-10-2

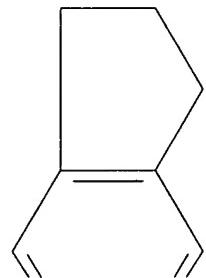
244147-11-3 244147-12-4 244147-13-5

(for olefin polymn. and manuf. of polyolefin having high mol. wt.
and high comonomer incorporation even at high polymn. temp.)

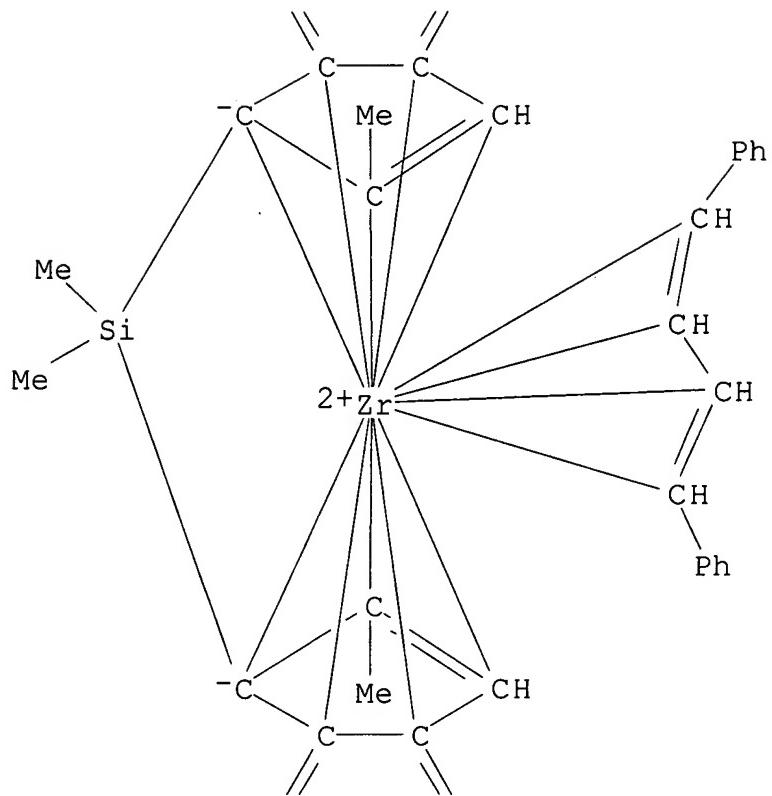
RN 244146-41-6 ZCPLUS

CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyi)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2-methyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

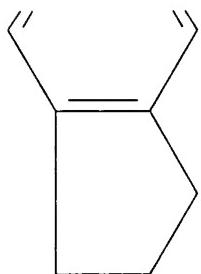
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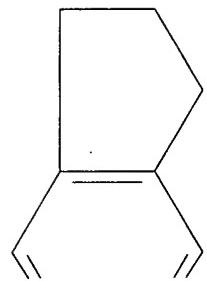
RN 244146-42-7 ZCPLUS

CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2,3-dimethyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

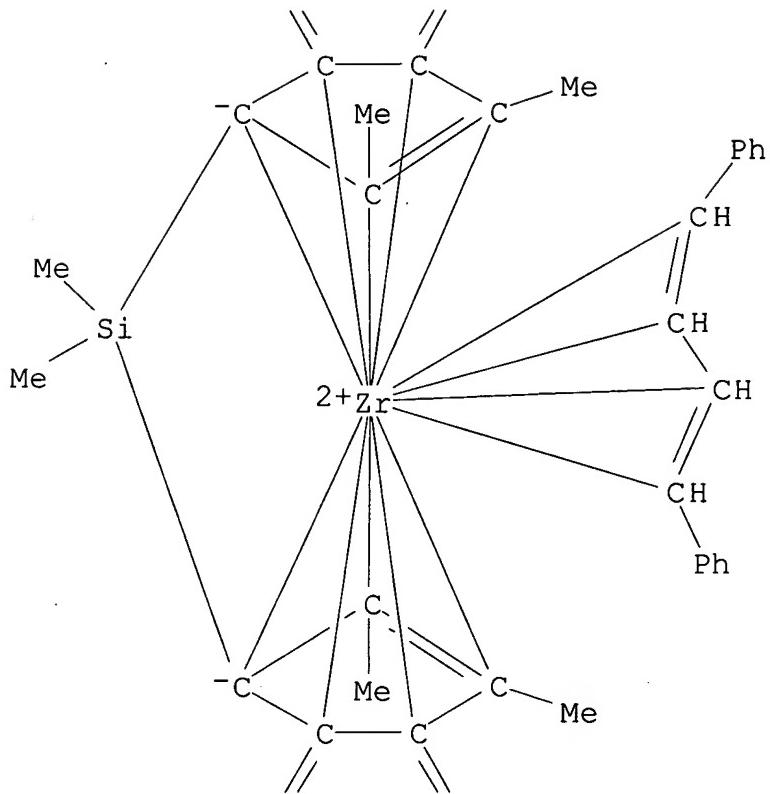
LEE 10/536,858

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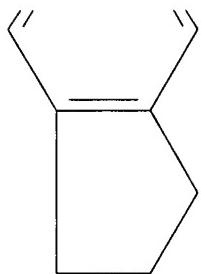
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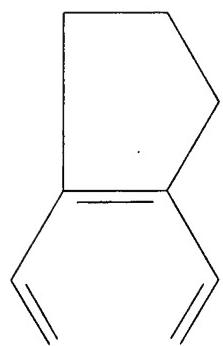
RN 244146-43-8 ZCPLUS

CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diy1)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-3-phenyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

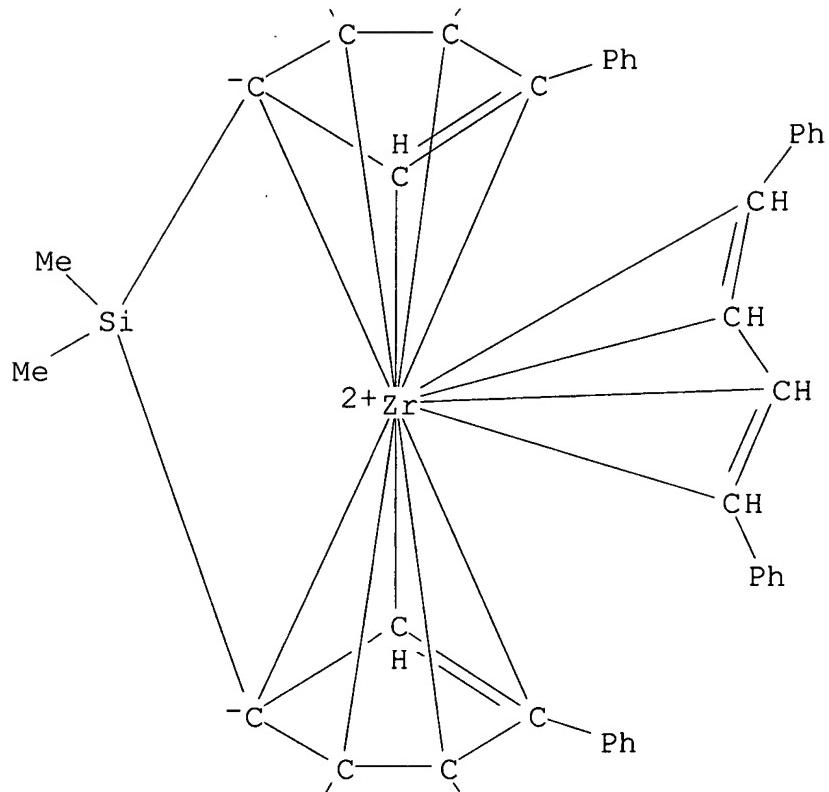
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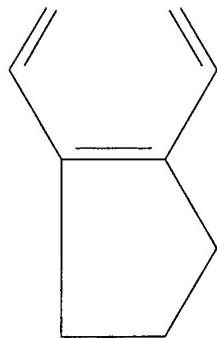
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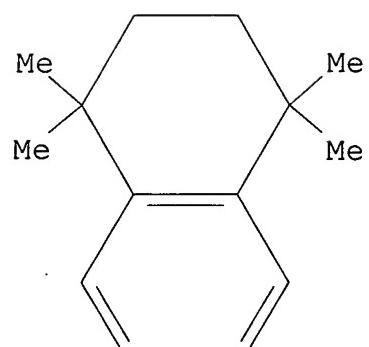
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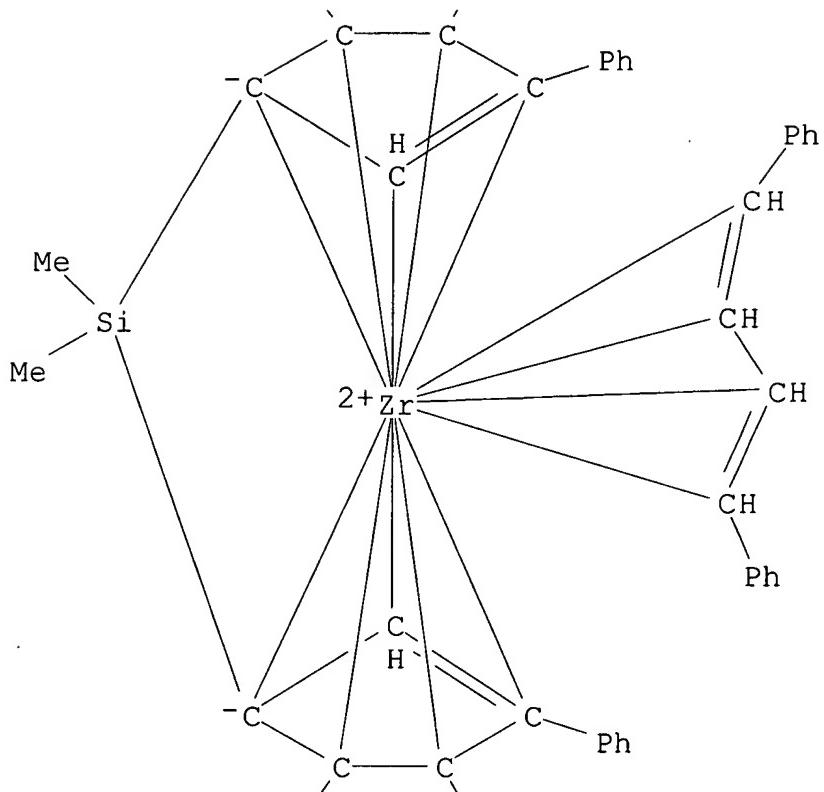
RN 244146-44-9 ZCPLUS

CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyil)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-phenyl-1H-benz[f]inden-1-ylidene]]-(9CI) (CA INDEX NAME)

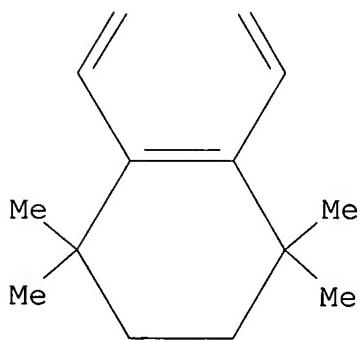
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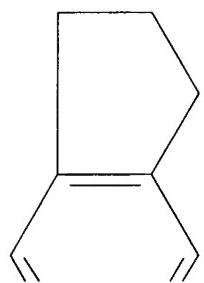


RN 244146-50-7 ZCPLUS
 CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2-methyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

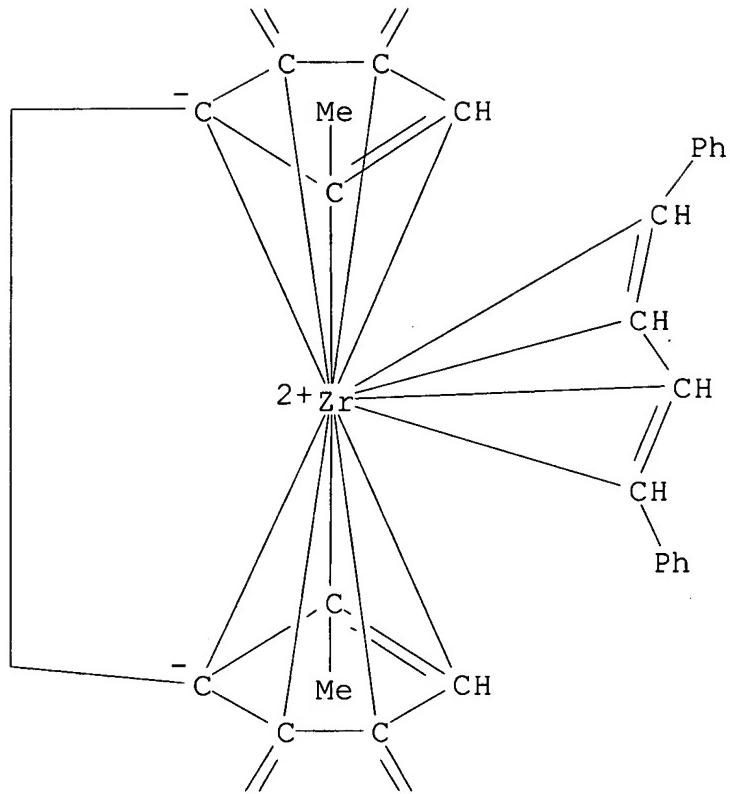
LEE 10/536, 858

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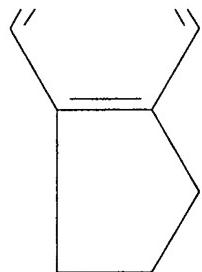
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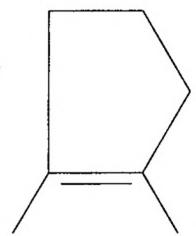
RN 244146-51-8 ZCPLUS

CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2,3-dimethyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

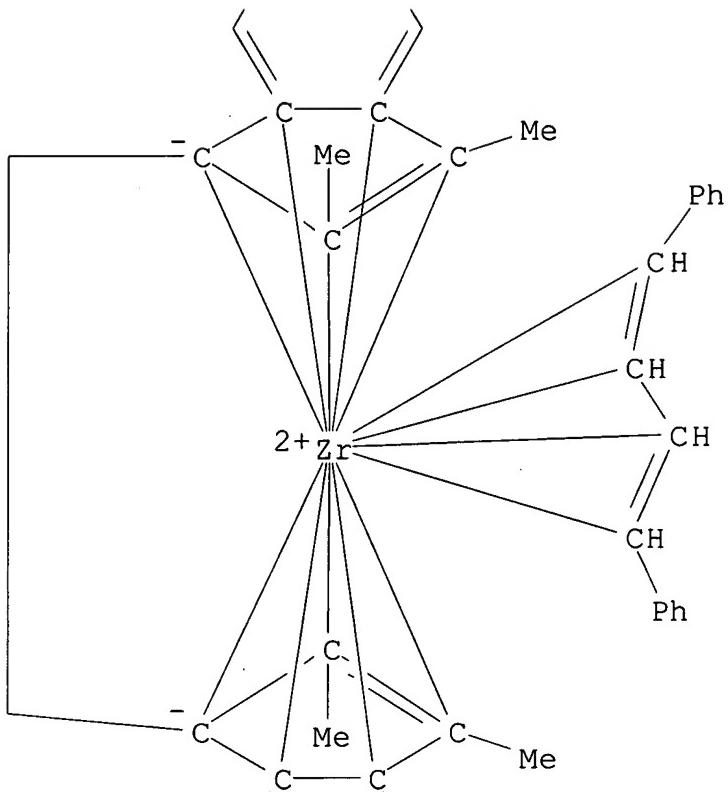
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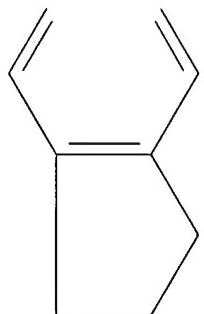
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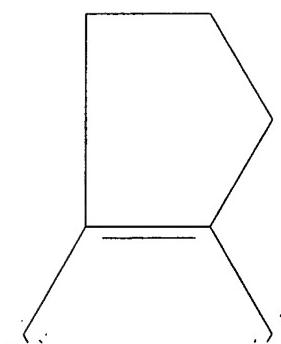
RN 244146-52-9 ZCPLUS

CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]] [1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-3-phenyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

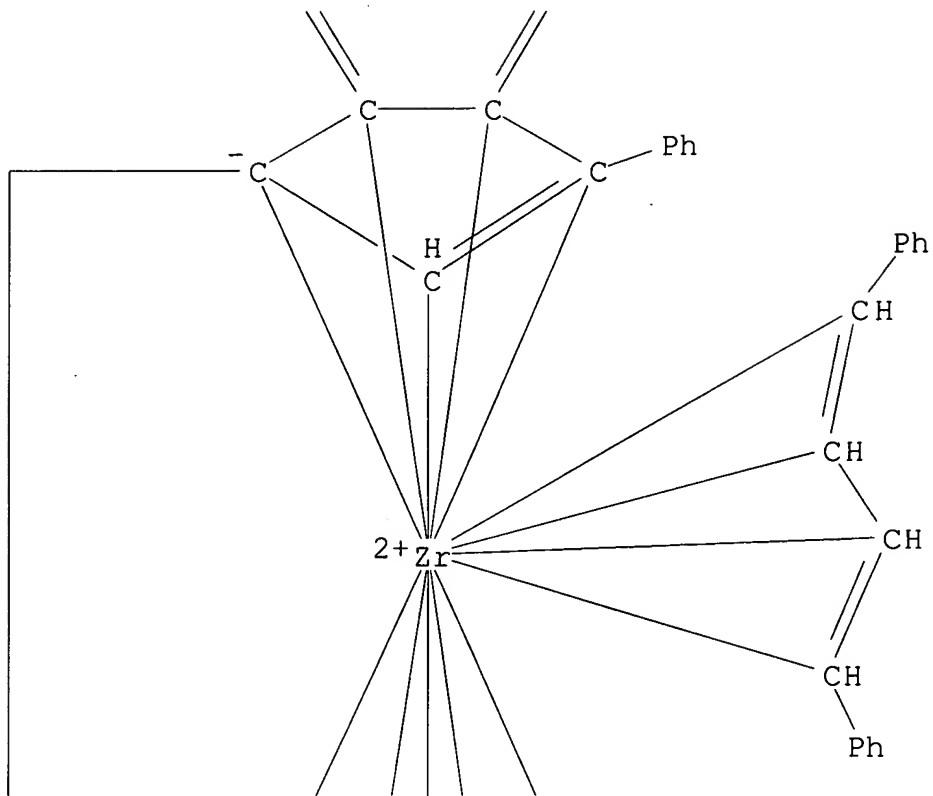
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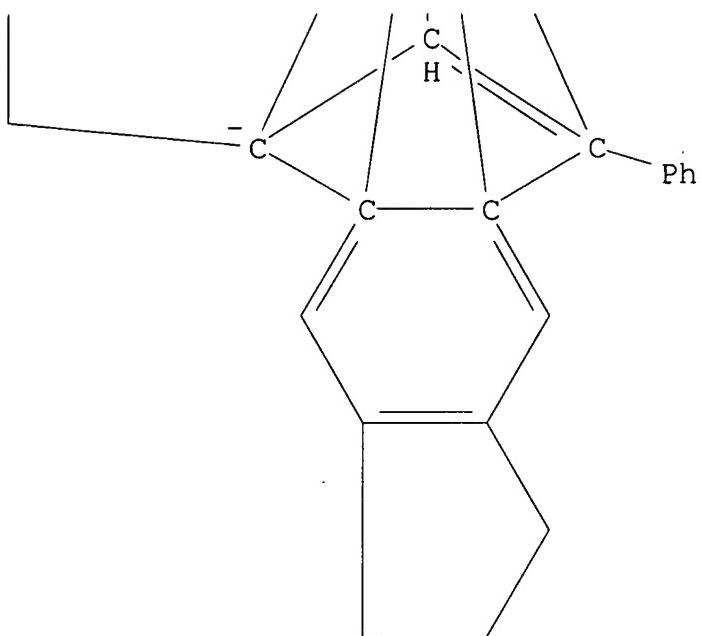
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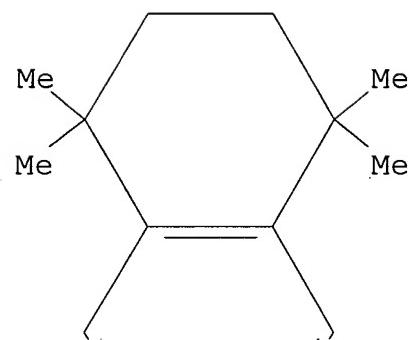
RN 244146-53-0 ZCPLUS

CN Zirconium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]] [1,2-ethanediylbis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-phenyl-1H-benz[f]inden-1-ylidene]]- (9CI) (CA INDEX NAME)

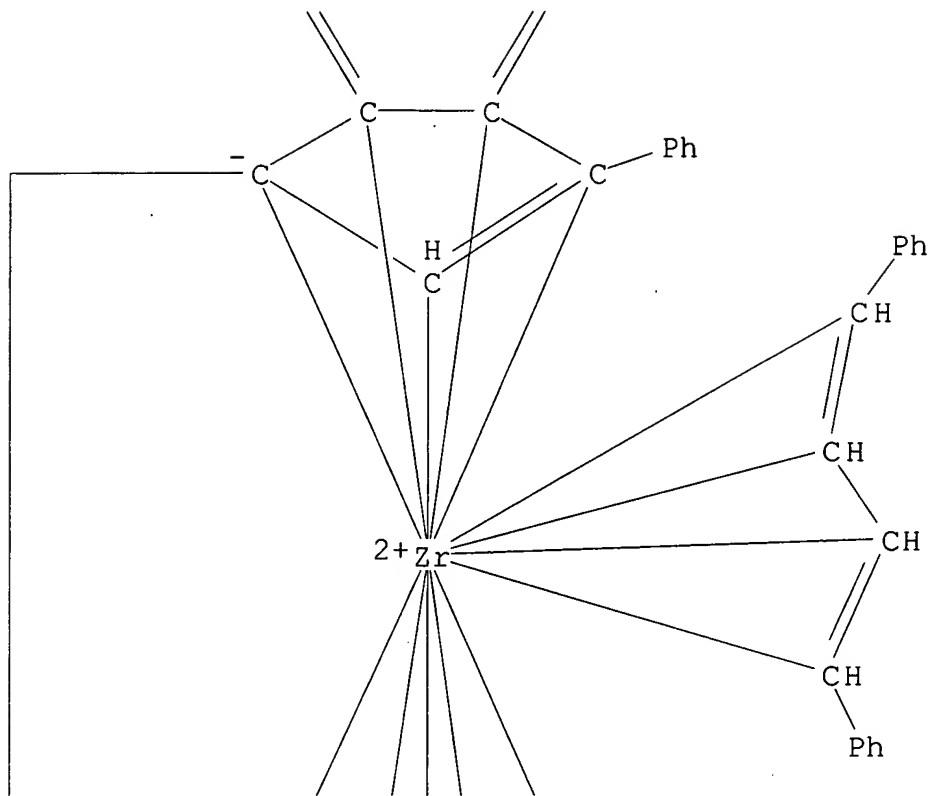
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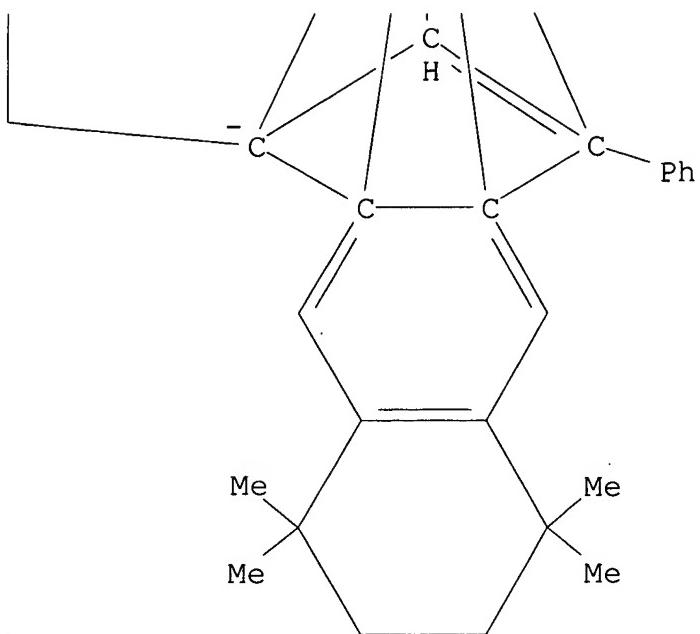
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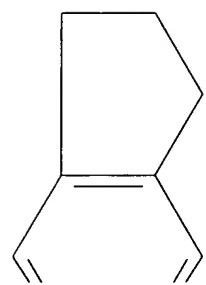
RN 244146-64-3 ZCPLUS

CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2-methyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

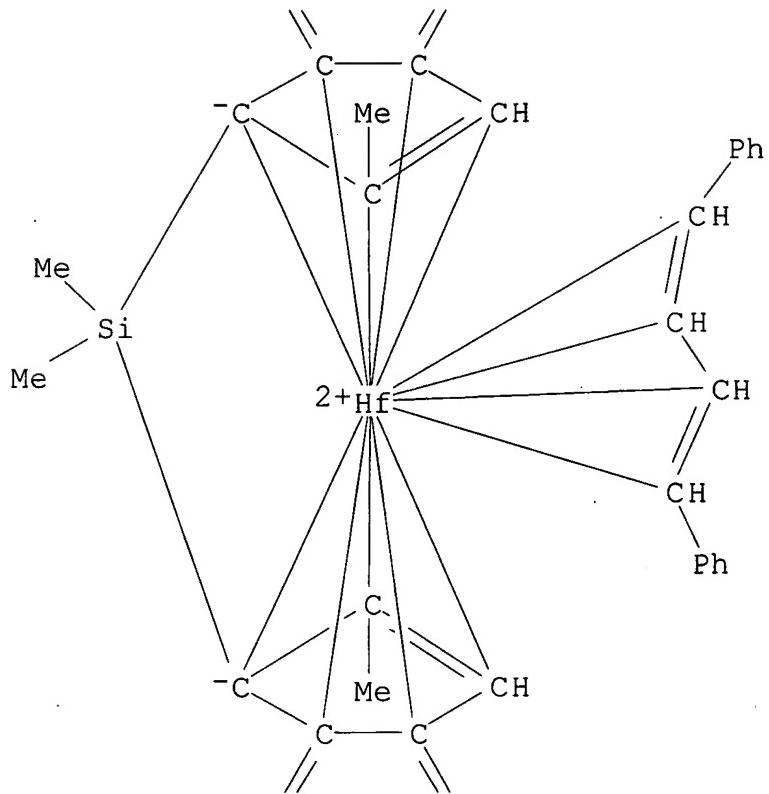
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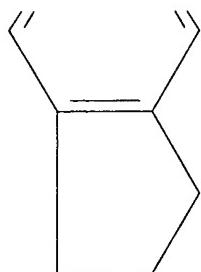
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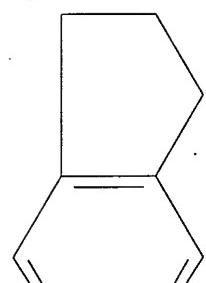
RN 244146-65-4 ZCPLUS

CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diy1)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2,3-dimethyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

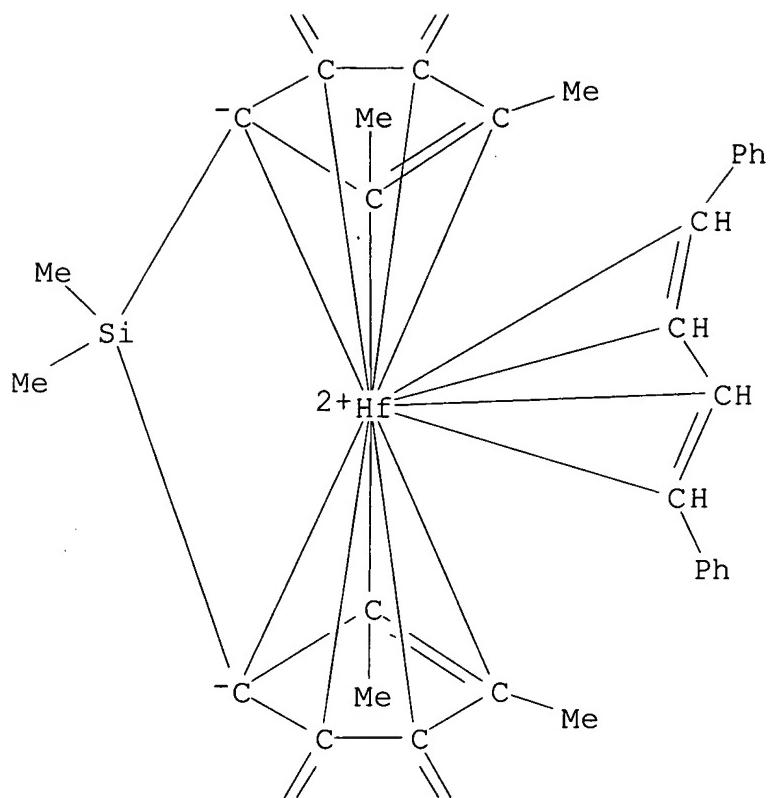
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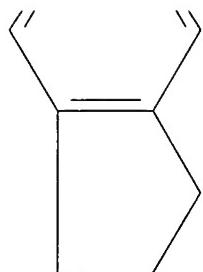
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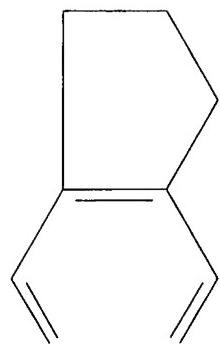
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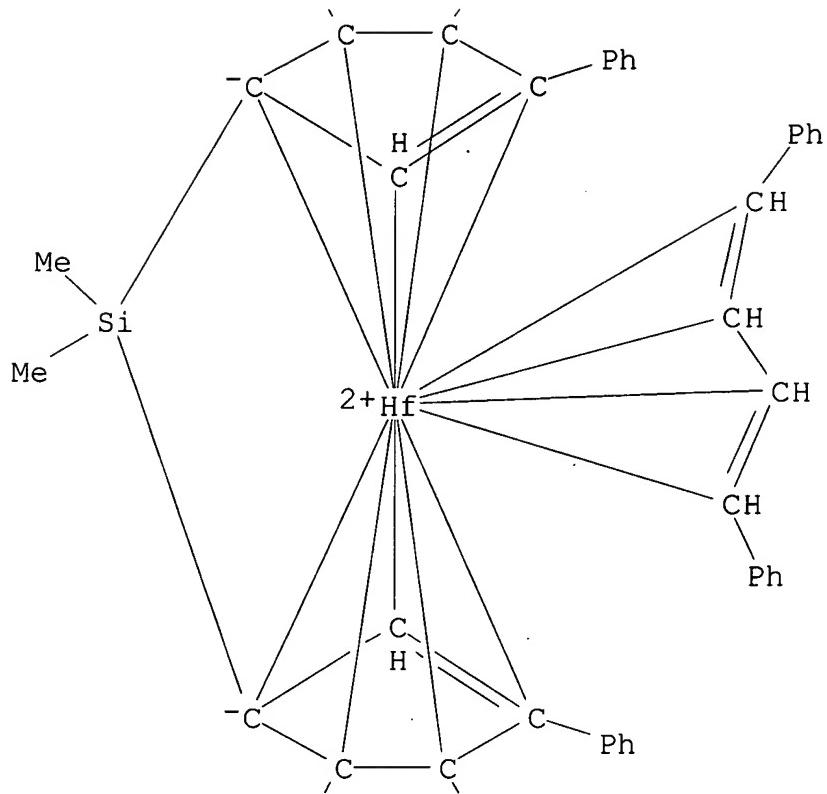
RN 244146-66-5 ZCPLUS

CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyI)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-3-phenyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

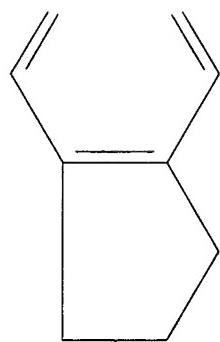
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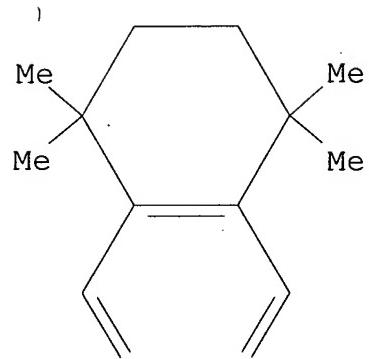
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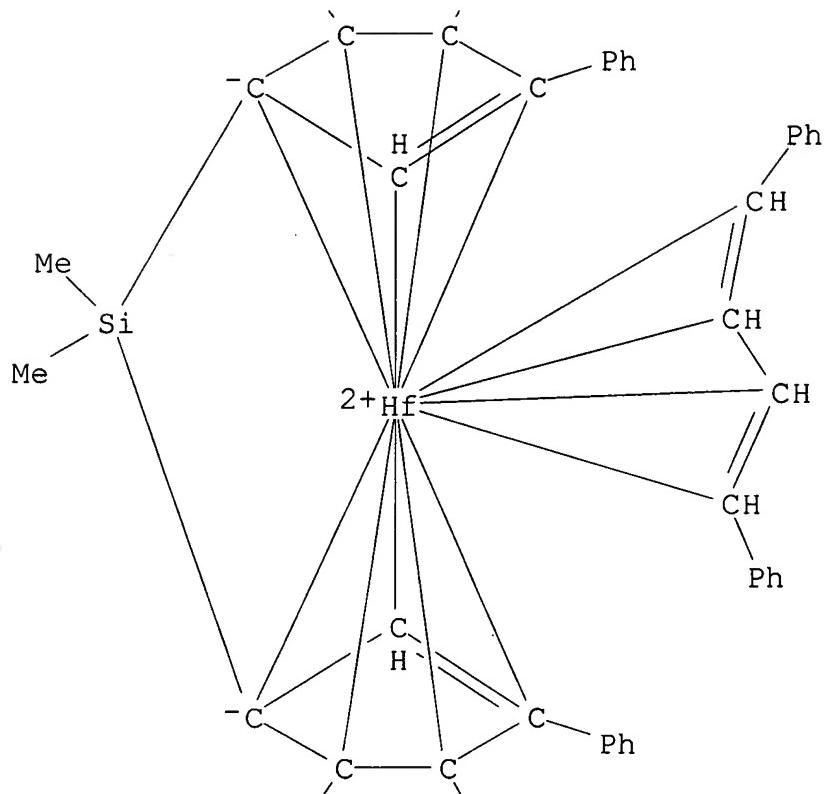
RN 244146-67-6 ZCPLUS

CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyil)bis[benzene]][(dimethylsilylene)lbis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-phenyl-1H-benz[f]inden-1-ylidene]]- (9CI) (CA INDEX NAME)

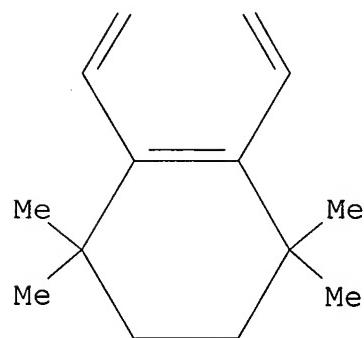
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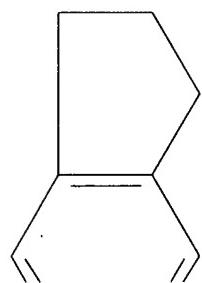
RN 244146-77-8 ZCPLUS

CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]] [1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2-methyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

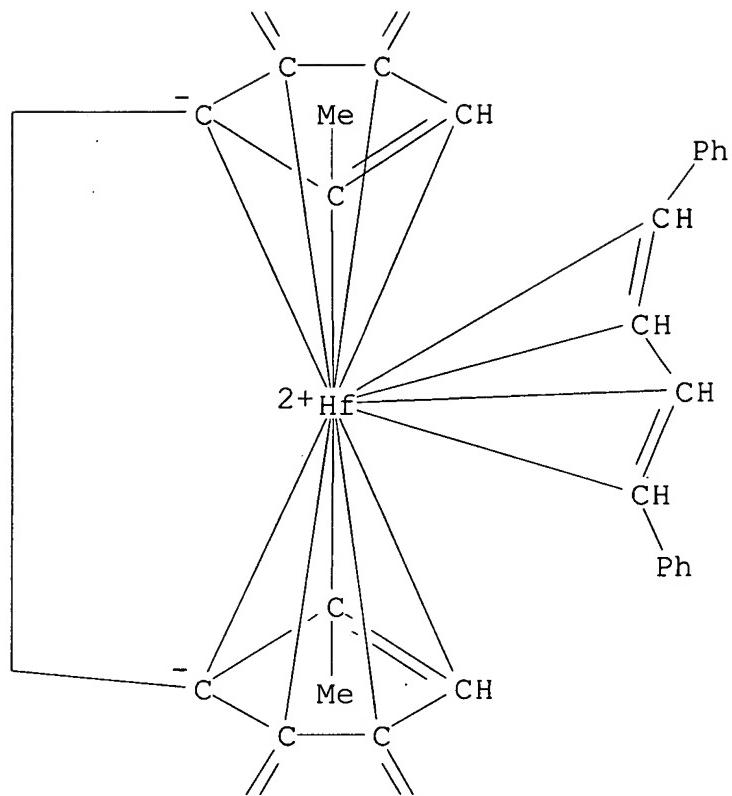
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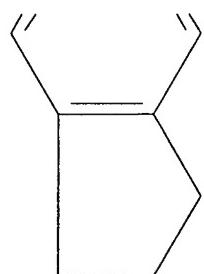
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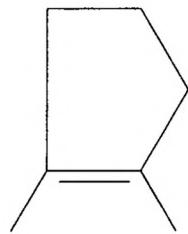
RN 244146-78-9 ZCPLUS

CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2,3-dimethyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

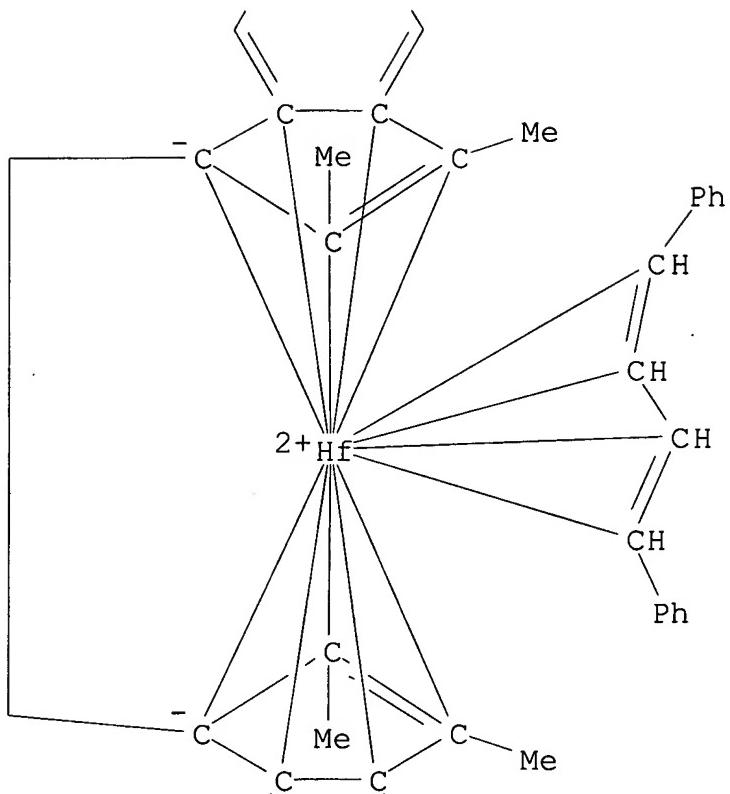
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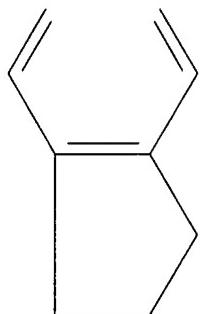
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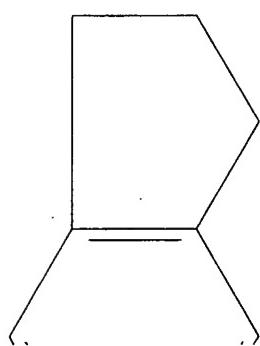
RN 244146-79-0 ZCPLUS

CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]] [1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-3-phenyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

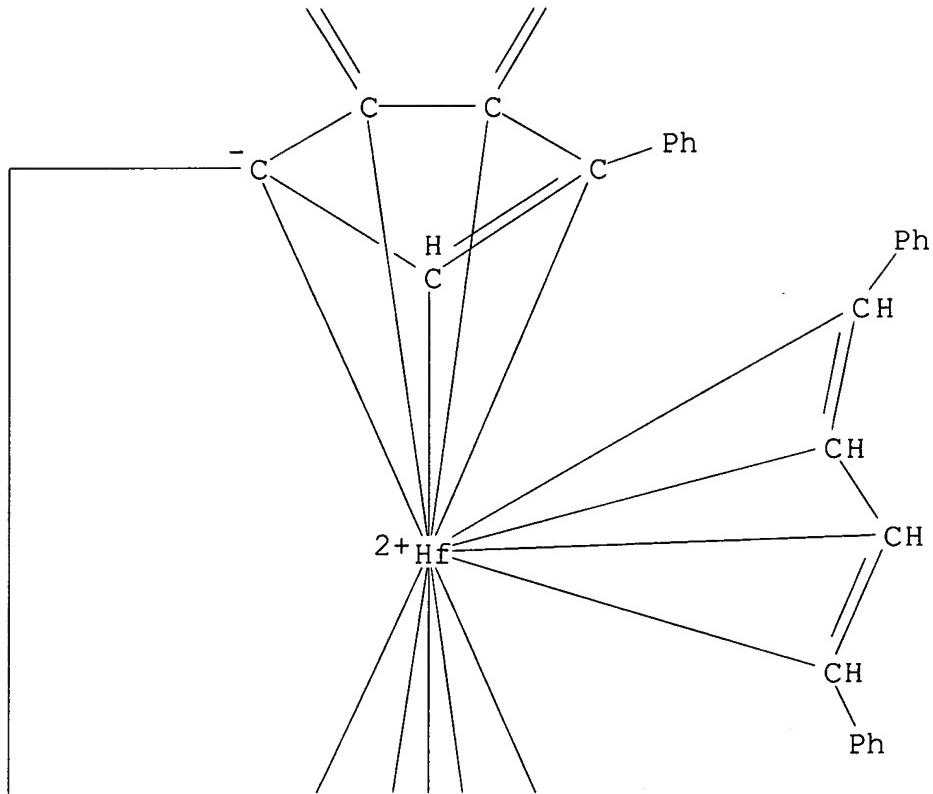
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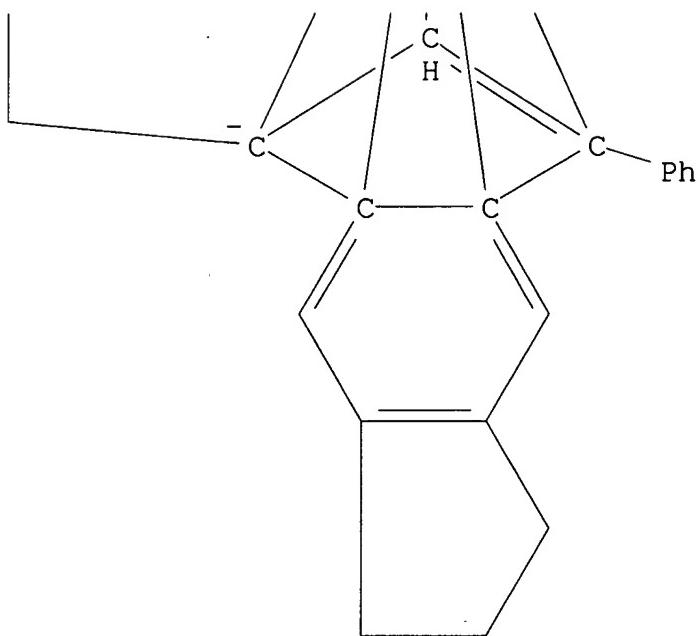
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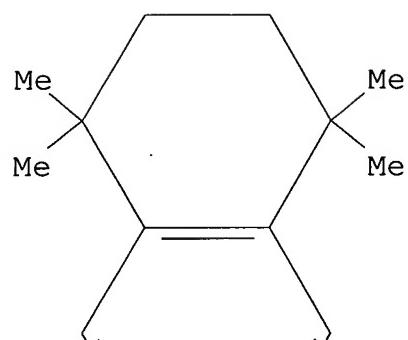


RN 244146-81-4 ZCPLUS
CN Hafnium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][1,2-ethanediylbis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-phenyl-1H-benz[f]inden-1-ylidene]]- (9CI) (CA INDEX NAME)

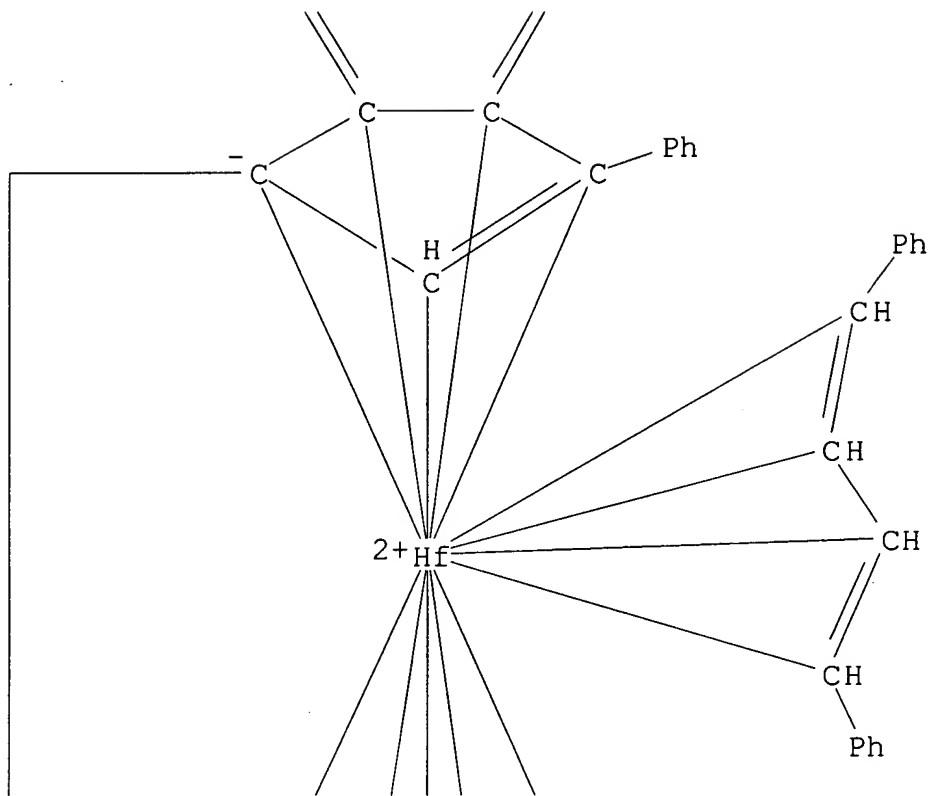
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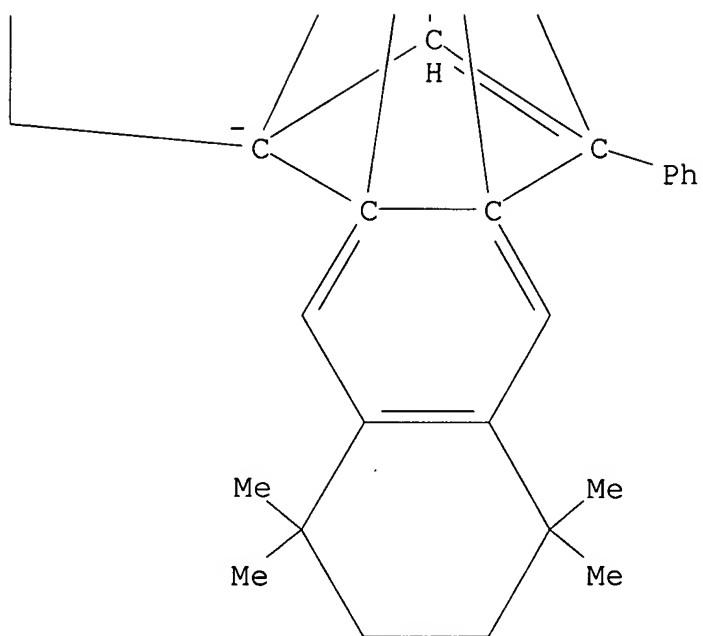
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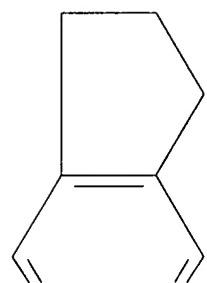
RN 244146-96-1 ZCPLUS

CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2-methyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

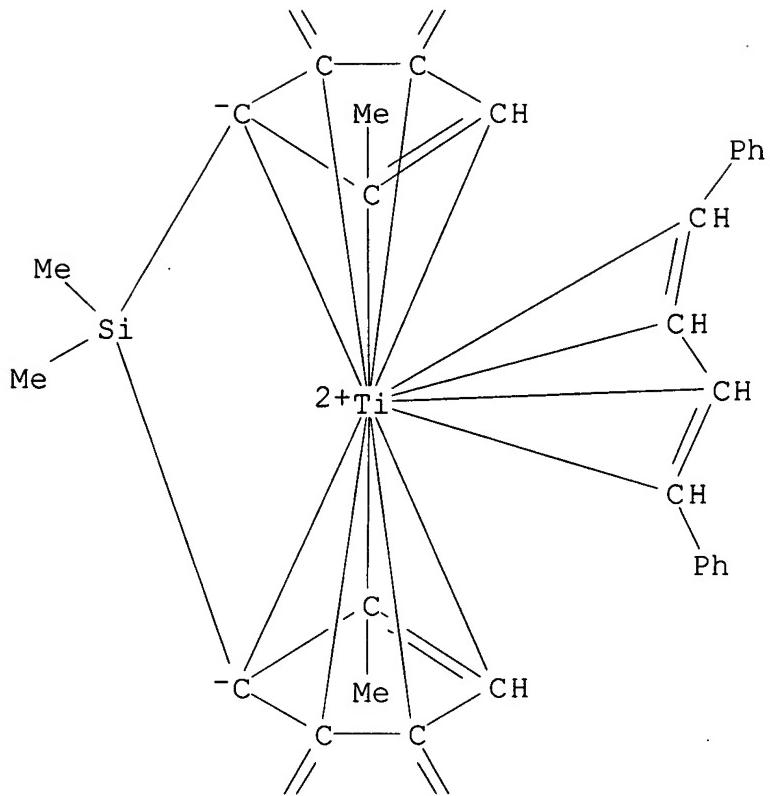
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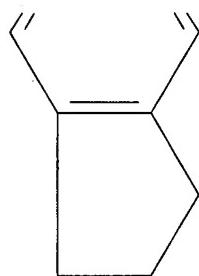
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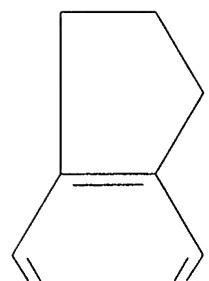
RN 244146-97-2 ZCPLUS

CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diy1)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2,3-dimethyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

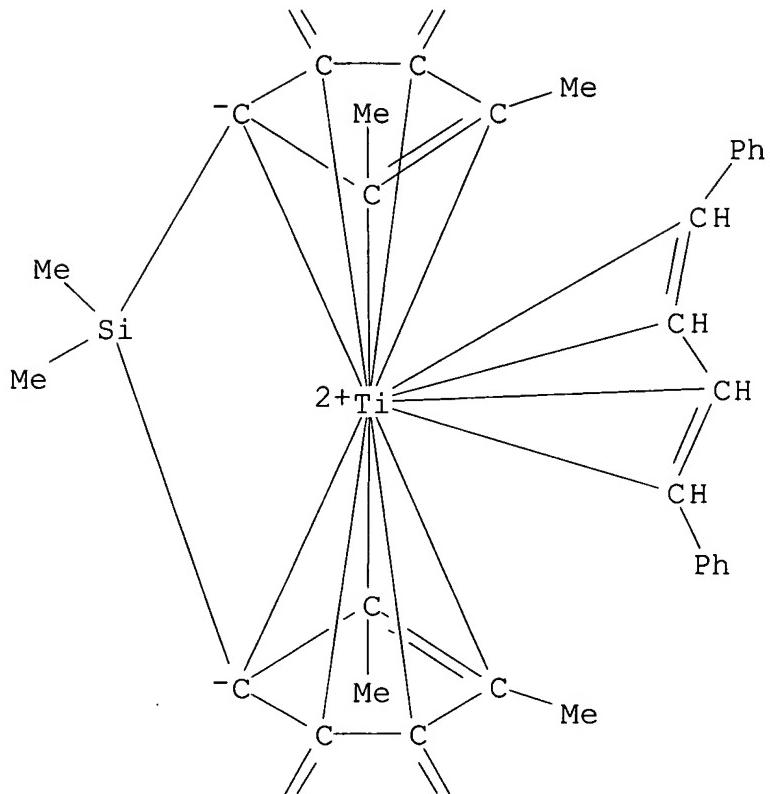
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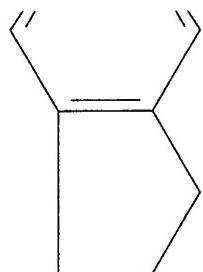
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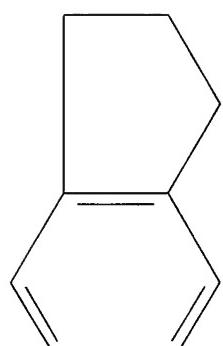
RN 244146-98-3 ZCPLUS

CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyyl)bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-3-phenyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

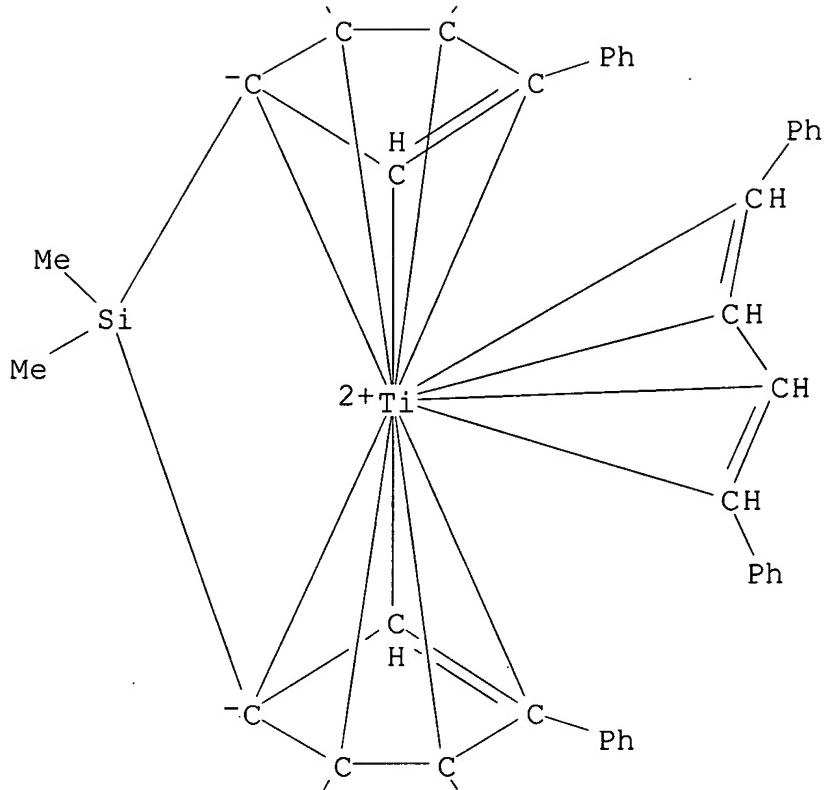
LEE 10/536, 858

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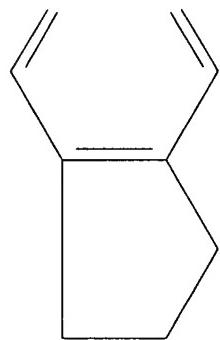
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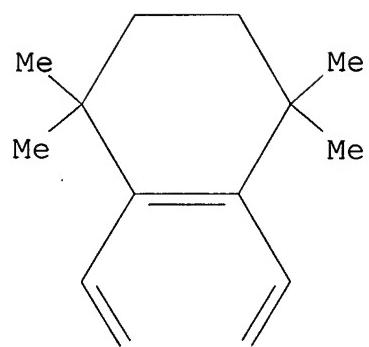


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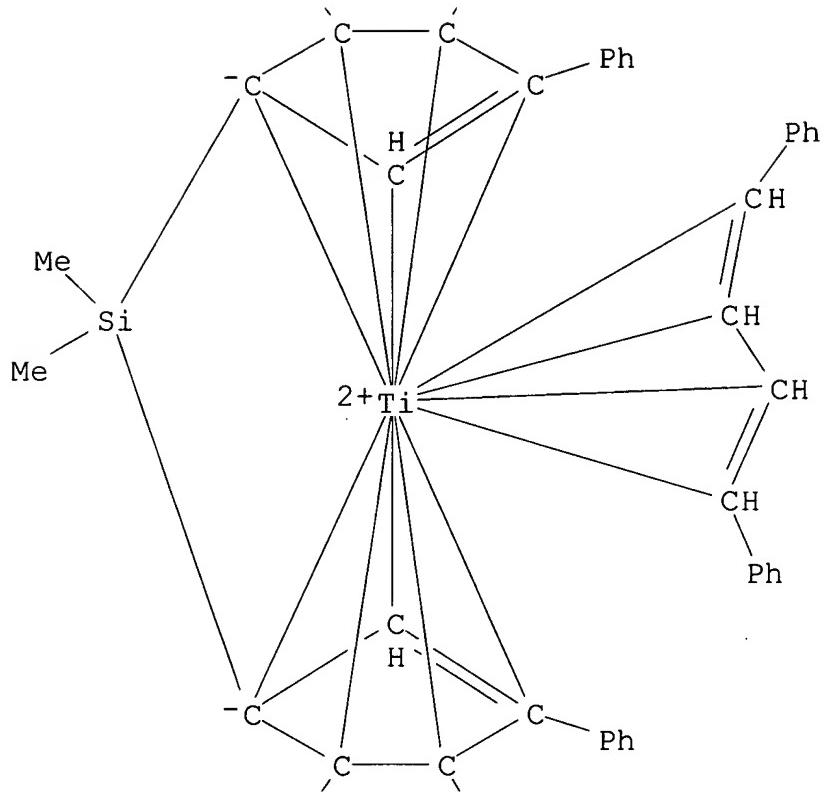


RN 244146-99-4 ZCPLUS
 CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyil)bis[benzene]] [(dimethylsilylene)lbis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-3-phenyl-1H-benz[f]inden-1-ylidene]]- (9CI) (CA INDEX NAME)

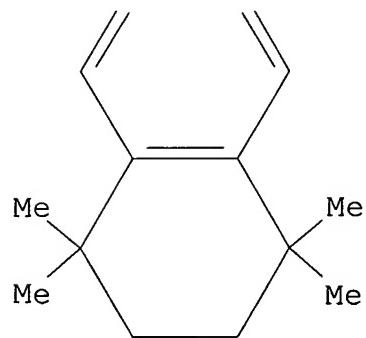
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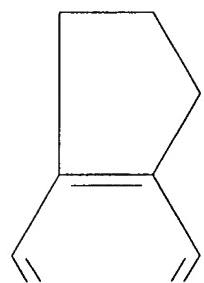
RN 244147-10-2 ZCPLUS

CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]][1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2-methyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

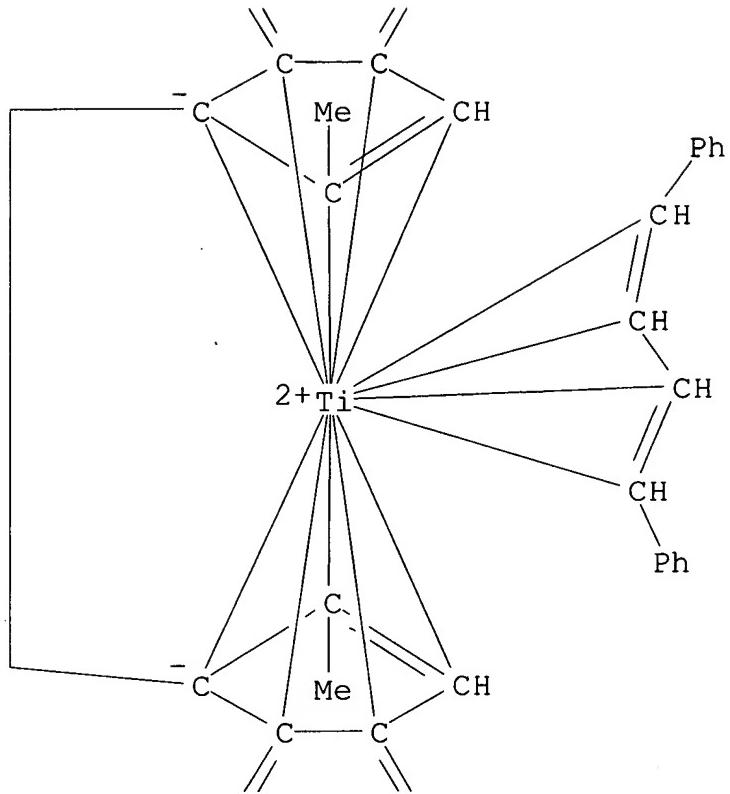
LEE 10/536,858

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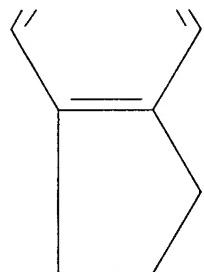
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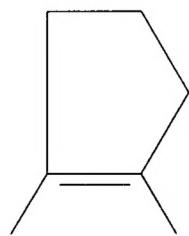
RN 244147-11-3 ZCPLUS

CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]] [1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-2,3-dimethyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

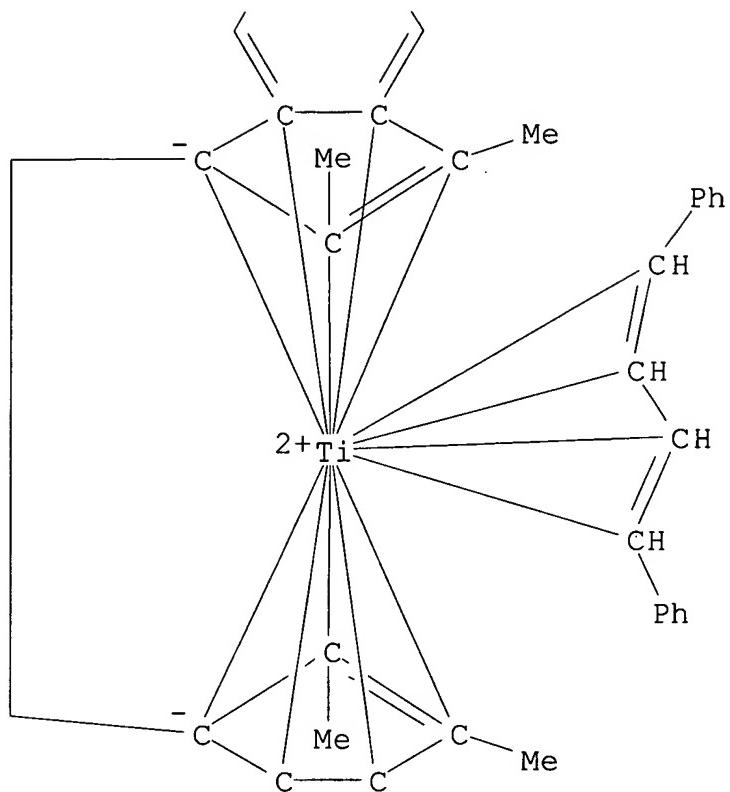
LEE 10/536,858

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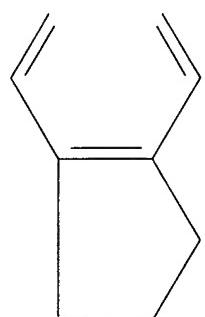
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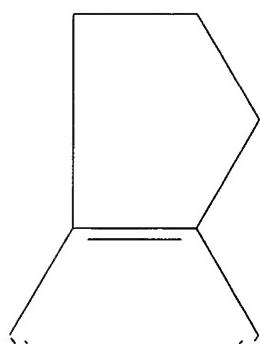
RN 244147-12-4 ZCPLUS

CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]] [1,2-ethanediylbis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-3-phenyl-s-indacen-1(5H)-ylidene]]- (9CI) (CA INDEX NAME)

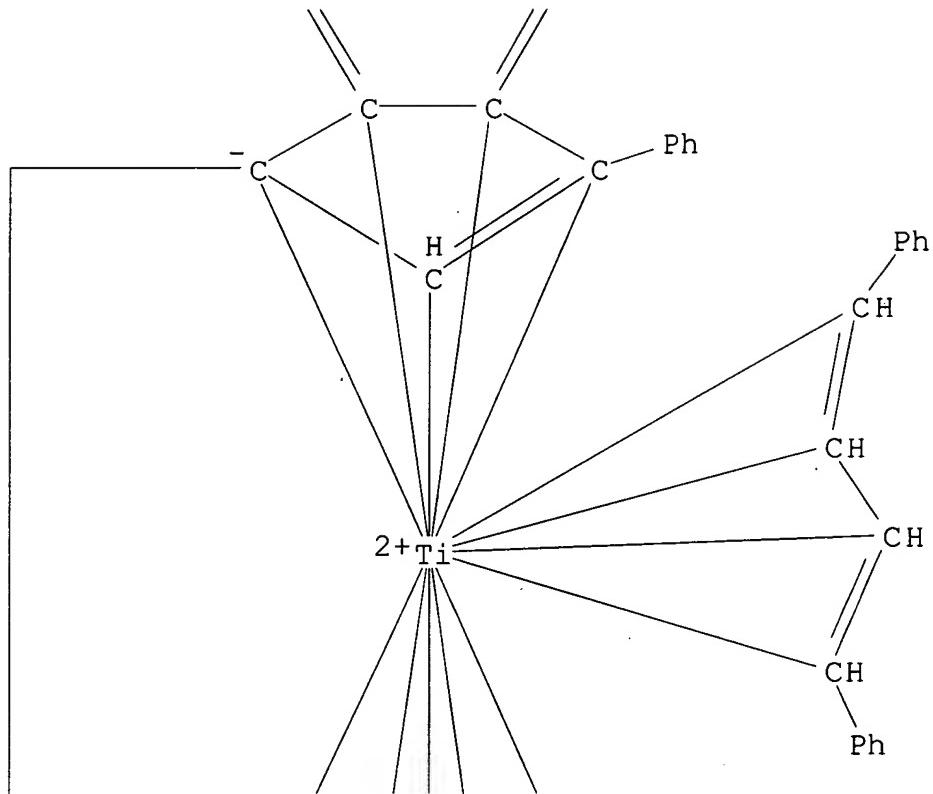
LEE 10/536, 858

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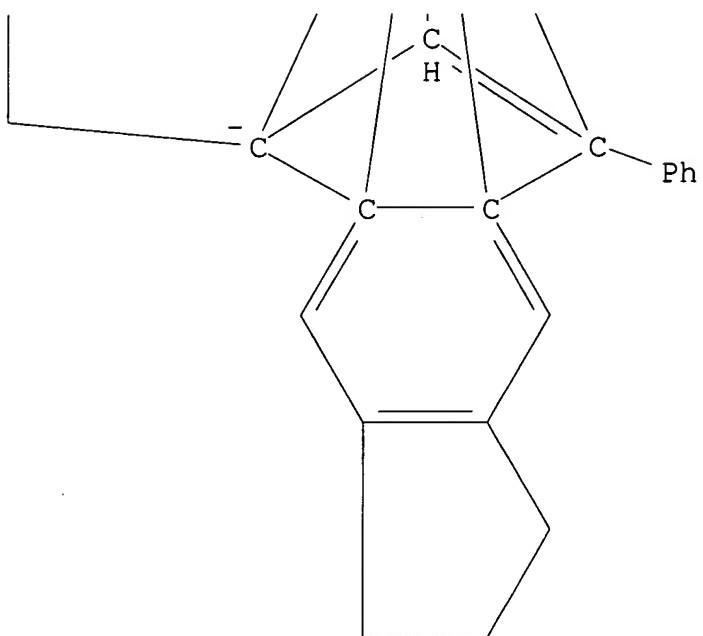
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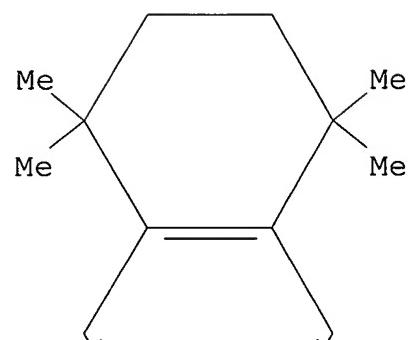
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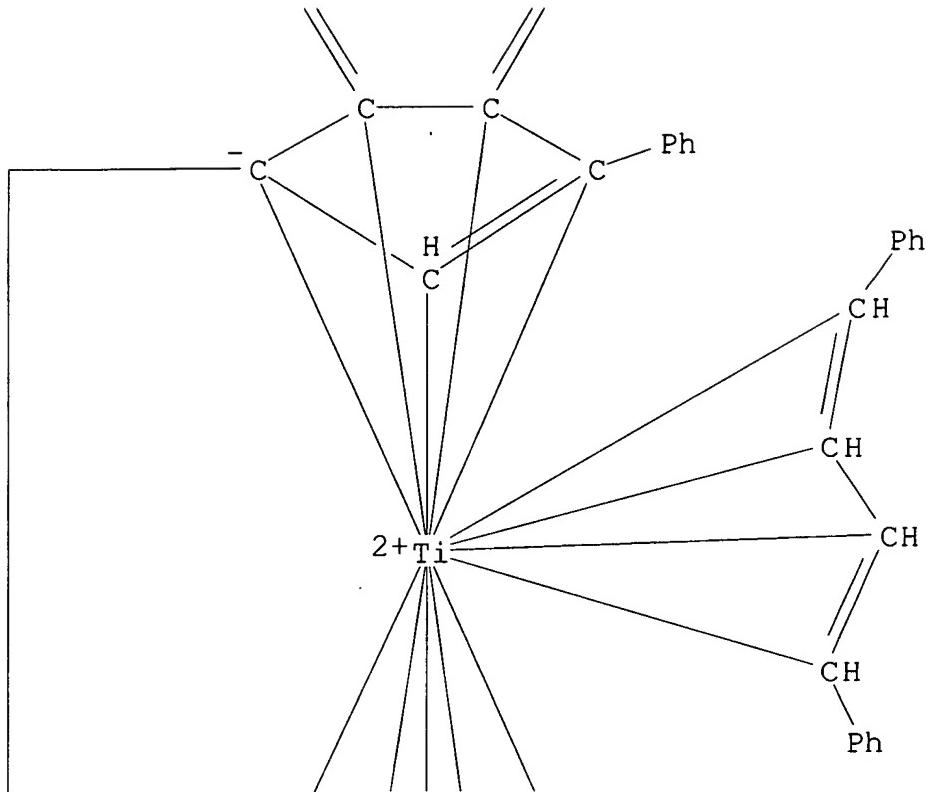
RN 244147-13-5 ZCPLUS

CN Titanium, [1,1'-(.eta.4-1,3-butadiene-1,4-diyl)bis[benzene]] [1,2-ethanediylbis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-5,5,8,8-tetramethyl-2-phenyl-1H-benz[f]inden-1-ylidene]]- (9CI) (CA INDEX NAME)

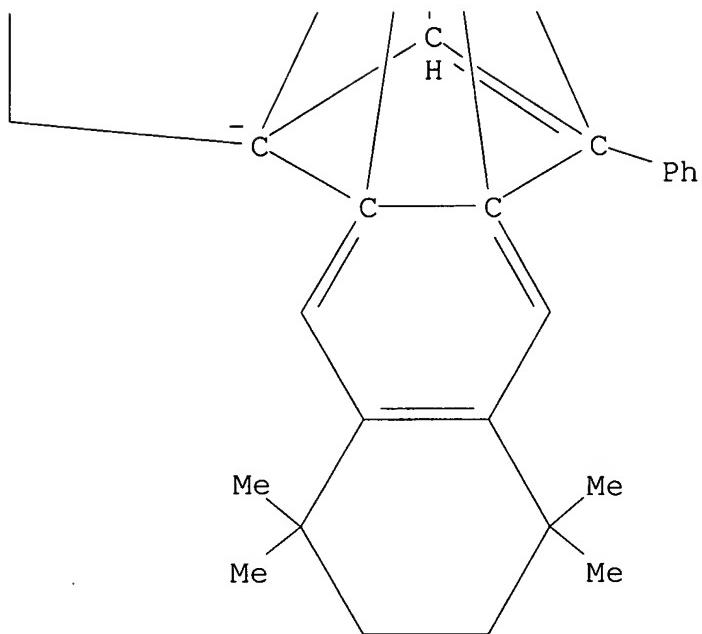
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IT **244147-25-9P**

(in integrated metallocene catalyst manuf. for olefin polymn.)

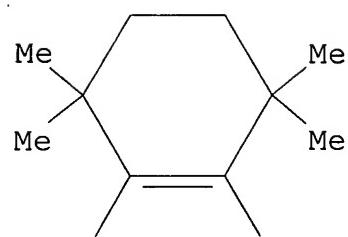
RN 244147-25-9 ZCAPLUS

CN Zirconium, [1,1'-.eta.4-(1E,3E)-1,3-butadiene-1,4-diy1]bis[benzene]][(dimethylsilylene)bis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-2,5,5,8,8-pentamethyl-1H-benz[f]inden-1-ylidene]]-, stereoisomer (9CI) (CA INDEX NAME)

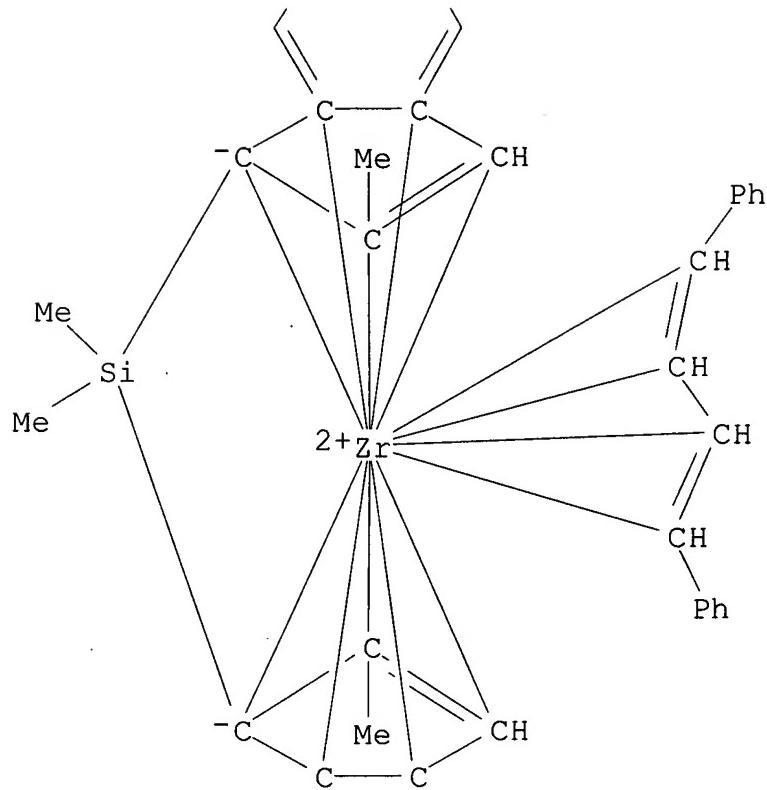
LEE 10/536,858

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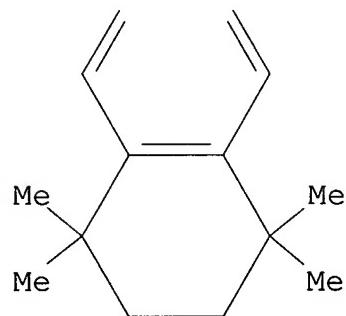
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IT 244146-41-6 244146-42-7 244146-43-8
 244146-44-9 244146-50-7 244146-51-8
 244146-52-9 244146-53-0 244146-64-3
 244146-65-4 244146-66-5 244146-67-6
 244146-77-8 244146-78-9 244146-79-0
 244146-81-4 244146-96-1 244146-97-2

244146-98-3 244146-99-4 244147-10-2
244147-11-3 244147-12-4 244147-13-5

(for olefin polymn. and manuf. of polyolefin having high mol. wt.
and high comonomer incorporation even at high polymn. temp.)

IT 244147-25-9P

(in integrated metallocene catalyst manuf. for olefin polymn.)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L9 ANSWER 7 OF 8 ZCPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:671112 ZCPLUS
DOCUMENT NUMBER: 130:95875
TITLE: Synthesis and polymerization behavior of
tetrahydro-2-methylbenzindenyltitanium and
zirconium compounds
AUTHOR(S): Foster, Patrick; Rausch, Marvin D.; Chien, James
C. W.
CORPORATE SOURCE: Department of Chemistry, University of
Massachusetts, Amherst, MA, 01003, USA
SOURCE: Journal of Organometallic Chemistry (1998),
571(2), 171-181
CODEN: JORCAI; ISSN: 0022-328X
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In order to further our study of the bis(2-methylbenz[e]indenyl)zirconium dichloride catalyst system, the analogous ligand, tetrahydro-2-methylbenz[e]indene (I), was synthesized. In the process of synthesizing I, the structural isomer tetrahydro-2-methylbenz[f]indene was also formed. This has been confirmed by the synthesis of tetrahydro-2,3-dimethylbenz[f]indene (II), tetrahydro-2,3-dimethylbenz[e]indene (III), and tetrahydro-2-methyl-3-phenylbenz[e]indene (IV) and the titanium trichloride derivs. (.eta.2-tetrahydro-2-methylbenz[e]indenyl)titanium trichloride and (.eta.5-tetrahydro-2-methylbenz[f]indenyl)titanium trichloride. The new ligand systems I, II, III, and IV were converted to the analogous unbridged zirconocene dichloride complexes bis(.eta.5-tetrahydro-2-methylbenz[e]indenyl)zirconium dichloride, bis(.eta.5-tetrahydro-2,3-dimethylbenz[f]indenyl)zirconium dichloride, bis(.eta.5-tetrahydro-2,3-dimethylbenz[e]indenyl)zirconium dichloride, and bis(.eta.5-tetrahydro-2-methyl-3-phenylbenz[e]indenyl)zirconium dichloride. The precursors were then activated with either methylaluminoxane (MAO) or triphenylcarbenium tetrakis(pentafluorophenyl)borate (trityl) and used as catalysts for the polymn. of ethylene and propylene. All zirconocene complexes were highly active for the polymn. of ethylene, and in some cases

produced cryst. polypropylene at lower polymn. temps.

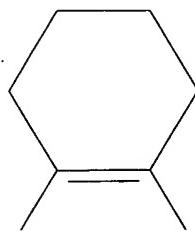
IT **219485-07-1P**

(polymn. catalyst, "meso-like"; synthesis and polymn. behavior of tetrahydro-2-methylbenzindenyltitanium and zirconium compds.)

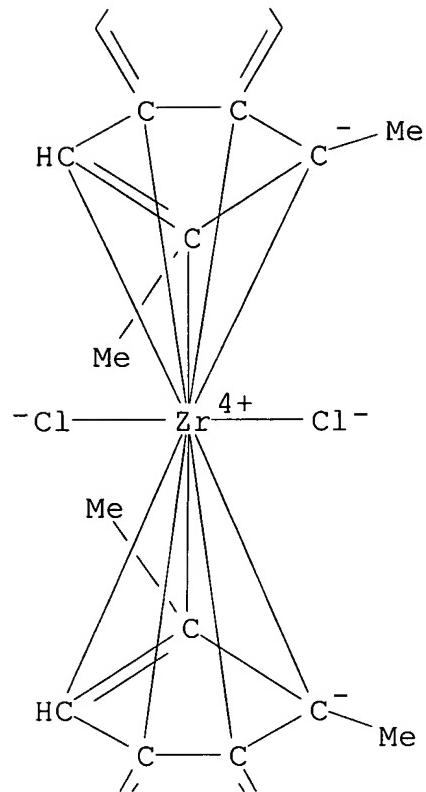
RN 219485-07-1 ZCPLUS

CN Zirconium, dichlorobis[(1,2,3,3a,9a-.eta.)-5,6,7,8-tetrahydro-1,2-dimethyl-1H-benz[f]inden-1-yl]-, stereoisomer (9CI) (CA INDEX NAME)

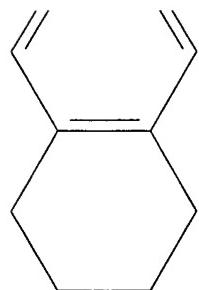
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IT 219485-07-1P

(polymn. catalyst, "meso-like"; synthesis and polymn. behavior of tetrahydro-2-methylbenzindenyltitanium and zirconium compds.)

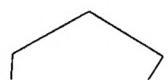
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 8 OF 8 ZCPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:629340 ZCPLUS
DOCUMENT NUMBER: 130:25156
TITLE: Synthesis and structure of [1,2-bis(1-indenyl)benzene]titanium and zirconium dichlorides
AUTHOR(S): Halterman, Ronald L.; Tretyakov, Alexander; Khan, Masood A.
CORPORATE SOURCE: Department of Chemistry and Biochemistry,
University of Oklahoma, Norman, OK, 73019, USA
SOURCE: Journal of Organometallic Chemistry (1998),
568(1-2), 41-51
CODEN: JORCAI; ISSN: 0022-328X
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The palladium-catalyzed coupling of 1,2-diiodobenzene with indenylzinc complexes obtained from indene, 4-methylindene, 4,7-dimethylindene and hydrindancene gave 1,2-bis(1-indenyl)benzenes in 29-45% yield. New phenyl-bridged ansa-bis(indenyl)titanium and -zirconium dichlorides were obtained from these ligands in good yield either by addn. of TiCl₃ or ZrCl₄ to their lithium salts (61-92% yield) or by addn. of Zr(NMe₂)₄ to the neutral ligands (59-67%). In each case the zirconium tetraamide metalation gave very high dl-selectivity. The n-BuLi/ZrCl₄ metalation of the phenyl-bridged unsubstituted indene gave a 3:2 ratio of dl- to meso- while placing substituents at the 4,7- and 5,6-positions led to 10:1 selectivity in favor of the dl-isomer. The n-BuLi/TiCl₃ metalation gave between 1:1 and 4:1 selectivity. The solid state structure of [1,2-bis(1-indenyl)benzene]dichlorozirconium was obtained by x-ray anal.
IT 215949-40-9P 215949-43-2P 216251-56-8P
(prepn. of)
RN 215949-40-9 ZCPLUS
CN Titanium, dichloro[1,2-phenylenebis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-s-indacen-1(5H)-ylidene]]-, stereoisomer (9CI) (CA INDEX NAME)

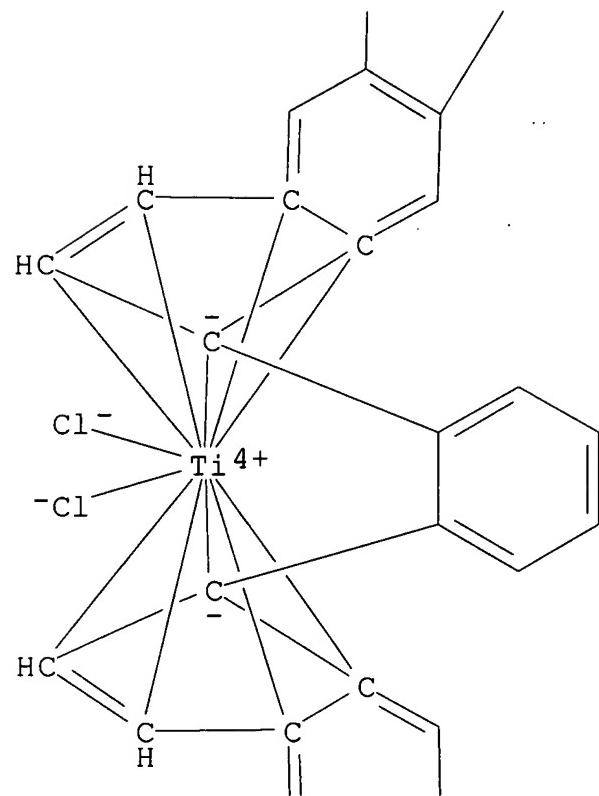
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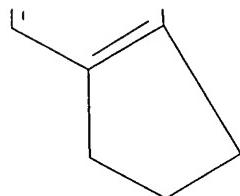
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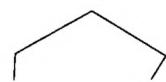
RN 215949-43-2 ZCPLUS

CN Zirconium, dichloro[1,2-phenylenebis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-s-indacen-1(5H)-ylidene]]-, stereoisomer (9CI) (CA INDEX NAME)

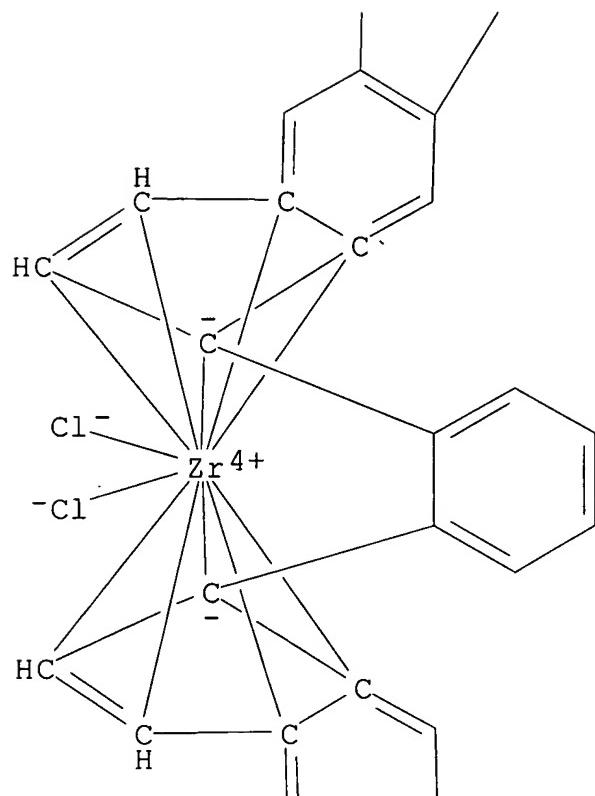
LEE 10/536,858

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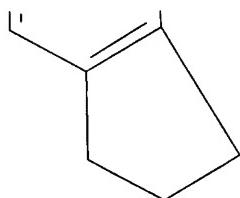
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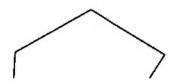
RN 216251-56-8 ZCPLUS

CN Titanium, dichloro[1,2-phenylenebis[(1,2,3,3a,8a-.eta.)-6,7-dihydro-s-indacen-1(5H)-ylidene]]-, stereoisomer (9CI) (CA INDEX NAME)

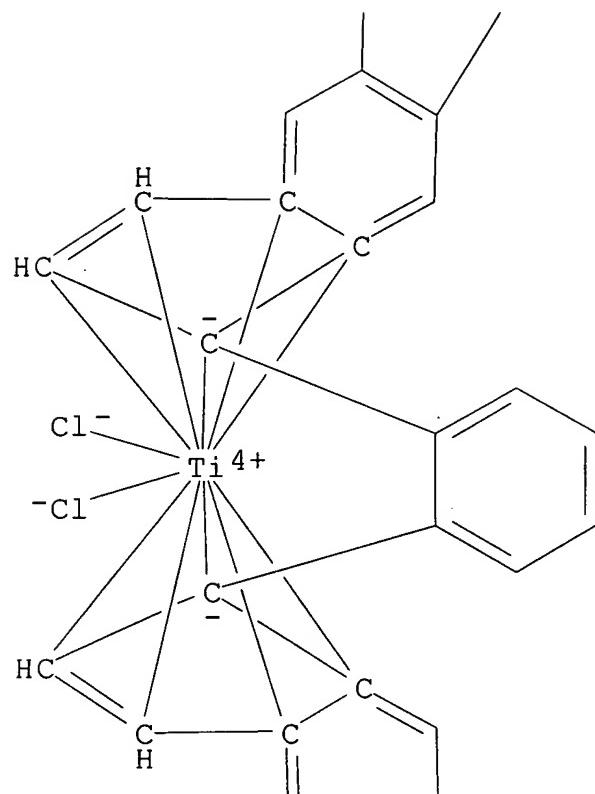
LEE 10/536,858

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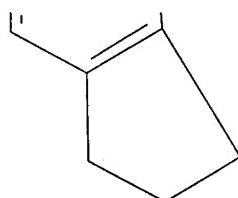
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IT 215949-40-9P 215949-43-2P 216251-56-8P

(prepn. of)

REFERENCE COUNT:

48

THERE ARE 48 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
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